

#16 September/October 1987

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# INFO

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YOUR GUIDE TO COMMODORE AND AMIGA COMPUTING!

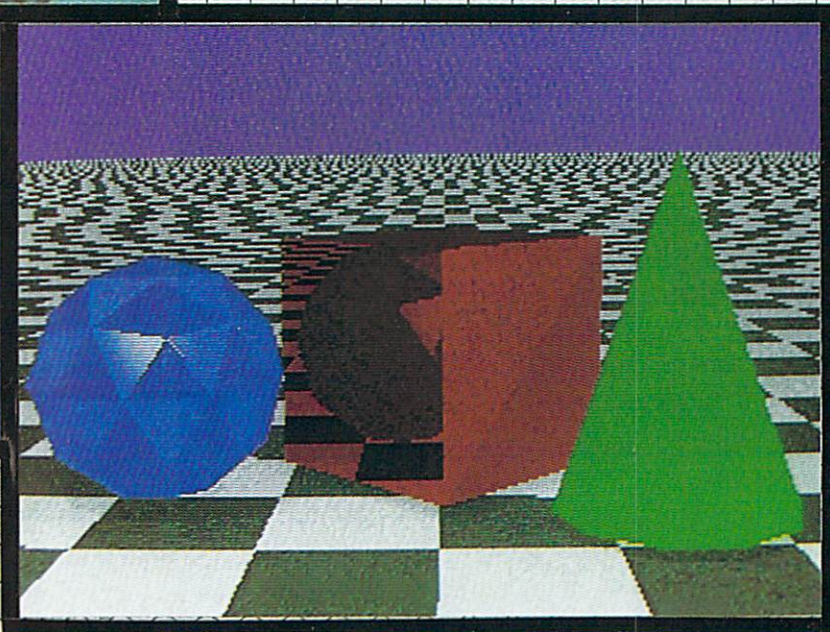
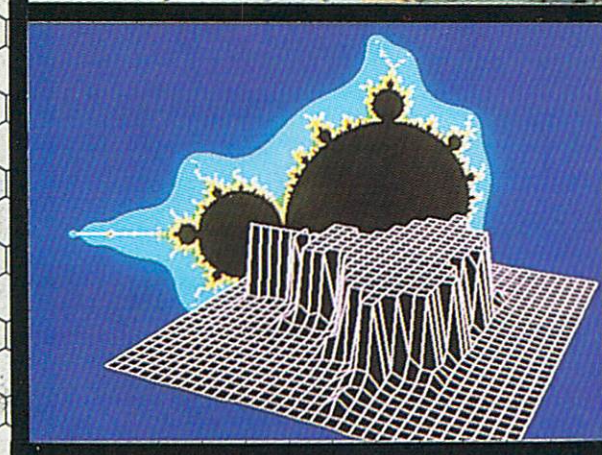
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## GRAPHICS RENAISSANCE:

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# Will this be your last mission?

Everybody wants to be a hero. But in this case, you can't be blamed for having second thoughts.

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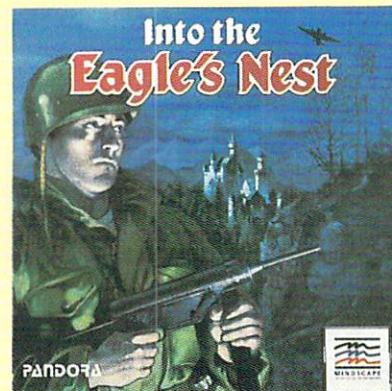
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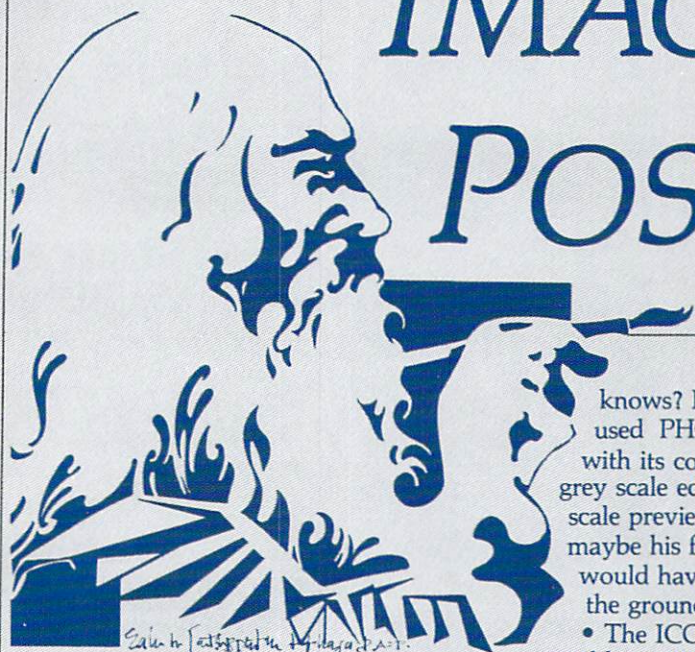
## Mindscape takes the arcade home.



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# IMAGINE THE POSSIBILITIES



knows? If Da Vinci had used PHOTO FINISH with its color editor, grey scale editor and grey scale preview mode, maybe his flying machine would have gotten off the ground.

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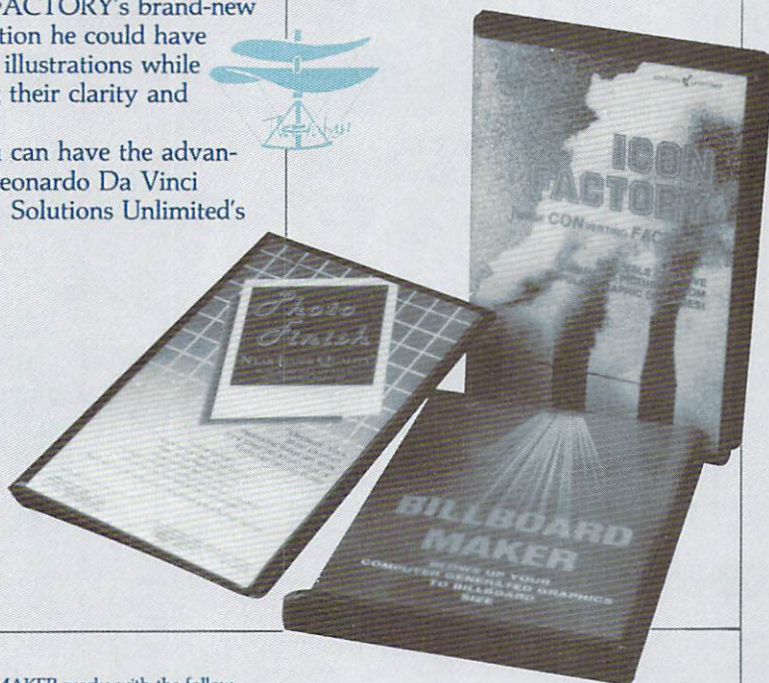
• PHOTO FINISH would have allowed Da Vinci to make clean, smooth, *Near Laser Quality* illustrations of his ideas. Who

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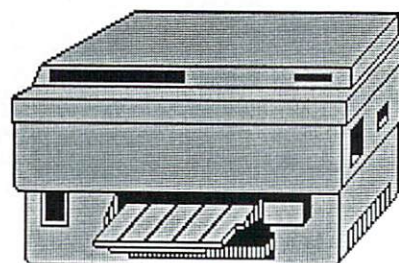


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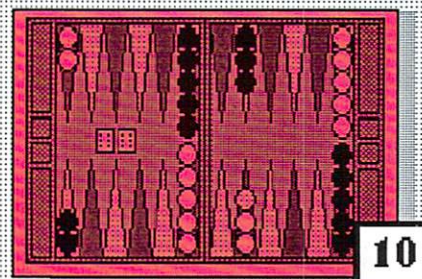
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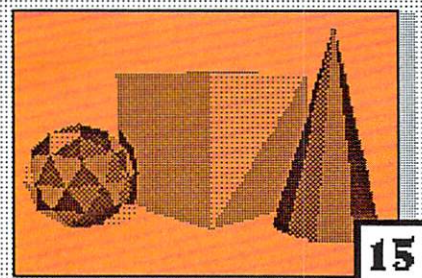
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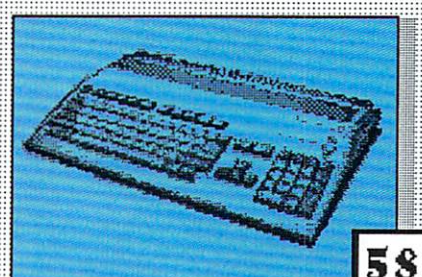
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the

## EDITORS' PAGE

### LOOK & FEEL

#### AN HISTORICAL PERSPECTIVE

The flow of computer software profits has undergone two major shifts of direction in the short history of home computing. The recipients of the first big software profits were superstar game designers. A game hit could make one of these early programmers an overnight millionaire.

Soon, however, computer software companies hired managers from outside the computing world, managers who had no awe for great game programmers and were more concerned with freeing up money for marketing and packaging and promotion and fancy offices like they learned about in business school. The software business got more "professional" and programmers' royalties dropped below the movie star level.

Of course, once the software companies began looking prosperous, they attracted the attention of that Barracuda Of The Business World, the Lawyer. Now a good portion of software profits goes to line the pockets of the attorneys who write the incredibly insipid and ludicrously complex software license agreements, non-disclosure agreements, convoluted royalty contracts, and other legal paperwork around which the computer software industry now revolves. And, of course, these lawyers also handle the lawsuits.

### LOOK AND FEEL

It used to be if you had a beef with someone you just quit hanging out in the places he hung out in, forbade your children to play with his children, and said nasty things about his ancestors when you passed him on the street. Now everyone seems to be lawsuit crazy. People sue for "personal injury" or "loss of companionship" or "mental anguish" whenever a lawyer can convince them that they can get a juicy out-of-court settlement (with a big fat percentage for the lawyer, of course). People sue relatives, friends, and even parents and children. And in the computer software industry, everyone sues everyone else over "Look and Feel".

Thinking back on the plethora of lawsuits in this industry over the last three or four years, it is mind-numbing to contemplate that we owe it all to Ronald McDonald. Several years back, shortly after McDonald's began the ad campaign that featured their McDonaldLand characters (the Grimace, Hamburgler, Mayor McCheese, etc.), Sid and Marty Krofft filed suit against McDonald's, charging that the characters were too similar to the characters in their popular "H.R. Pufenstuf" children's television show. Though they conceded from the start that none of the McDonaldLand characters was a direct copy of their copyrighted characters, Krofft Productions claimed that the McDonald's characters had the same "Look and Feel". Eventually the courts found in favor of the Kroffts, and McDonald's had to pay for the rights to continue to use the characters. The decision was an historic one in the annals of copyright law in that it declared the "Look and Feel" of a copyrighted property, and not just the actual content of the property itself, to be protected under the law. Of course, this opened up the entire field of copyrighted material to "Look and Feel" interpretation, including the area of computer software. Lawyers everywhere rejoiced.

### WHO'S IN COURT

The wave of software "Look and Feel" lawsuits began when Apple Computer sued Digital Research Inc., charging that Digital's GEM mouse-and-icon operating system (used on MS-DOS machines and built into the Atari ST) violated the Look and Feel of the Apple Macintosh's mouse-and-icon operating system. Digital shook in their boots, and settled out-of-court, paying Apple an undisclosed sum and redesigning GEM to meet with Apple's approval. Of course, the whole time Apple spokesmen reassured the press that the Macintosh's operating system was emphatically *not* a copy of the earlier Xerox Star workstation icon-and-mouse operating system.

The second big suit came when Broderbund sued Unison World, charging that the "user interface" of Unison's Print Master was too similar to Broderbund's Print Shop. To the credit of Unison World, they fought the case to



a court decision. Despite the judge's admission of utter confusion over the issues involved, he found in favor of Broderbund, giving Unison World the "golden opportunity to improve our user interface and make it much better than Print Shop's", according to Unison's President Tom Miller.

The latest and biggest of these suits is Lotus Development's lawsuit against Paperback Software and Mosaic Software, claiming that spreadsheet programs produced by the firms copied the Lotus 1-2-3 "user interface" too closely, violating the (yep...you guessed it!) "Look and Feel" of that program. That one is, at this writing, still in the courts. Of course, Lotus says it owes absolutely nothing to its predecessor, VisiCalc. The originators of VisiCalc feel otherwise, however, and have recently filed a \$100 million suit against Lotus to settle who owns the rights to the entire "electronic spreadsheet" concept.

In the meantime, Apple is reported to be clamping down on allowing third party companies to use the "Look and Feel" of Mac-based software when it is ported to other (read "MS-DOS") machines, a move that is sure to put a compatibility crimp in the desktop publishing industry.

## WHAT NOW?

Let's face it: it was the bottom-line-management types who started this wave of imitating the successful software of other companies in the first place. No programmer worth the title ever wants to just clone the work of another programmer--he wants to write something better! The people in this industry who are close to the machines and the software didn't create this problem, and they aren't the ones who dragged the whole mess into court, either. Court appearances take away from valuable programming time!

Where will it all end? If taken to its final conclusion, one company will own the rights to the videogame "concept", another will own the "user interface" for all spreadsheets, one will have a monopoly on the "look and feel" of wordprocessing, and that will be the whole software industry. Don't get us wrong...we are for copyrights, and for innovation. Cloning one another's work is not particularly healthy for the industry, and it shows an incredible lack of imagination on the part of the cloning companies. But competition is good, too, and we think this whole "Look and Feel" thing has already gotten way out of hand. We think it's time to liberate the software industry from the

control of the lawyers (and the Harvard Business School managers, for that matter) and return it to the people who love computing. If we allow the lawsuits to multiply out of control, this industry will not only stop growing, it will grind to a halt.

-Mark & Benn

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## ROM UPGRADES

Every couple of months we hear a new story from some Commodore owner about a game, or wordprocessor, or copy program that won't run on their brand new Commodore computer or disk drive, but works fine on their friend's older model. When we check it out with the software company, the answer is always the same: "Commodore changed the ROMs in that device and didn't let us know". When we talk to Commodore, the answer is always: "We don't guarantee that anything in the ROMS will remain the same from revision to revision except the jump tables".

We know that writing software is a lot of work, and there are some limitations as to what Commodore equipment will do without some tweaking of code at the machine level. But it seems to us that software publishers would have learned by now to stick to what Commodore tells them: *Don't count on anything staying the same in the ROMs except the jump tables*. It would save users a lot of consternation trying to load and run software that no longer works with the latest revision of the 1571 ROMs, or the C64 ROMs, or whatever, and would save the software companies the money, time, trouble, and customer dissatisfaction caused by the incompatibilities.

It would also make it easier on Commodore's reputation. It seems that Commodore might be catching a lot of heat for incompatible ROM upgrades that they don't really deserve. With an undeserved reputation for ROM incompatibilities, I'm sure it costs them some sales, which eventually hurts the software developers, too.

There are enough problems in this industry without making more. Commodore makes the machines, and that means they can also dictate the rules. If software developers would pay a little more attention to those rules, we might see an end to this problem.

-Mark & Benn





# INFO Reader Mail

Mail From: Samurail      QuantumLink

Date: Thursday 7-May-87 21:52 edt

The new look of issue #15 is terrific. I have really valued your reviews and used them as a guide in software and hardware purchases. The advice has been so good that I hesitate to complain, but more FYI than as a complaint: You have praised Prism's SuperKit on several occasions. I bought one. The disk boots on a brand new drive about 50 per cent of the time. Once booted, it then freezes about half the time. The parameters for some of the programs I would like to copy (e.g. F15, Print Shop, GEOS) do not work on the parameter copier. I called Prism and they said those are "bad parameters". Also, they said they have had some bad disks lately. Their suggested solution: send more money for what I bought in the first place! Please reconsider your rave review. Best regards and congratulations again!

Jared Cameron

We have gotten more complaints and comments about our five-star SuperKit review than we have ever gotten about any product review we have ever done. Here is a synopsis of what has happened regarding Prism and SuperKit:

(1) Prism has filed for bankruptcy under Chapter 13--they are out of business. The combination of problems was too much for them. Unfortunately, they leave many unsatisfied customers in their wake. We believe the folks at Prism were sincere in their desire to provide a good product and good service, but that good intentions were not enough to make it happen.

(2) Many SuperKit disks are marginal at best. Prism said they had "some troubles" with duplication that were later resolved, but indications from users are that lots of the disks are extremely touchy. Many do not work at all, and many more will not back themselves up or have features that refuse to function. The 100% functional SuperKit disk we received for our review is beginning to sound like a rare thing.

(3) Some SuperKit parameters do not work. Prism said "about a half dozen", but from what we hear there could be more. Of course, we didn't test all 400+ parameters for our review, so we didn't catch the bad ones.

(4) Prism never delivered promised parameter update disks, which makes the entire SuperKit system severely dated by now. Prism says they did not cash checks that were sent in for parameter disks--if you sent one, we suggest you

stop payment on it.

There are still copies of SuperKit on the market. With a track record of bad disks and Prism no longer around to provide any support, we recommend you stay away from it. -Mark & Benn

Mail From: Traveller2      QuantumLink

Date: Tuesday 26-May-87 18:14 edt

Hi guys! I was just rereading your Product RoundUp issue and ran across a five-star review on MandFXP-Enhanced, a Mandelbrot generator. What IS a Mandelbrot generator? How do they work? What can you do with them? Thanx! -Jon Grout

A Mandelbrot generation program plots colorful patterns based on the calculation of points in the Mandelbrot set, a set of complex numbers generated by a mathematical equation first postulated by mathematician and IBM Fellow Benoit Mandelbrot. It is one of many interesting equations in the field of Fractal Geometry. The most interesting feature of such plots is that the closer you look, the more detail you see. Many of the patterns generated by fractals resemble trees or coastlines or mountains or other natural objects. It's a fascinating area of study that is right on the frontier of modern mathematics. For more information on the subject, check out the feature article on graphics in this issue. Mark & Benn

Send comments, questions, and loose change to:

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Or send us EMail via these online services:

CompuServe	70215,1034
QuantumLink	INFO Mag
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PlayNet	Ben D
BIX	infomag
Delphi	INFO

Please, do not call the INFO Offices! We don't have the staff to handle questions on the phone!



Mail From: GDL                      QuantumLink  
Date: Wednesday 20-May-87 19:42 edt

Dear INFO, I just read about your take-over of the Midnite Software Gazette. How will you handle those of us that subscribe to both magazines? Also, congrats on yet another super issue. Don't you ever get tired of hearing how great you are?

*If you were a Midnite subscriber you will be getting INFO now on a two-for-one basis (Midnite came out twice as often and cost half as much, so that worked out nice and even). If you subscribed to both INFO and Midnite, your subscription was extended by the appropriated number of issues.*

-Mark & Benn

Mail From: User125                      QuantumLink  
Date: Friday 15-May-87 01:36 edt

I understand that in the issue #11 Product RoundUp that you had something on the Quick Data Drive wafer drive from Entrepo (now Asteck Co.) If so can I still order this issue? Thank you!

-John Miller

*That issue is available for \$5.50 from our back issues department. Check out the subscription envelope in this issue for details. That brings up the point that we often delete items from the RoundUp when they disappear from the market (as the wafer drive did for a time), and if you need to know about these older products you can pick up an earlier RoundUp issue. Issues #1, #3, #11, and #14 are the available RoundUp issues. By the way, we also ran a full review of the Entrepo Data Drive in issue #9 (we rated it two stars).*

-Mark & Benn

U.S. Mail

Dear INFO, Please publish your subscriber coding scheme, so I can tell when my subscription runs out. Thanks.

-R.P. Thompson, Greenville TX

*Your wish is our command! Your label has four numbers, like this:*

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*The first is the issue number your subscription started with, in this case issue #11. The second is the length of your subscription, 6 issues for this example. The third is your last issue number, issue #16 here. The last number, #15, is the current issue number. We'd like to be more specific on the label itself, but postal regulations are very restrictive about what information is allowed on a label.*

-Mark & Benn

U.S. Mail

Dear INFO, Several issues back [#9] you ran an article about the @SAVE bug based on one of my talks at the Lincoln Commodore Computer Camp. As I was preparing that talk I came up with the idea that the bug might have been caused by an interrupt but I didn't have time to test my idea. However, the idea of an alternative approach fit in well with my talk so I included it, expressing my reservations. When I got home, I checked it out and, son-of-a-gun, that wasn't the problem. Since I was up to my ears in house construction, I didn't pursue the matter further. As a result I was rather chagrined and embarrassed when your article based on the talk appeared in INFO. I guess I should have contacted you as soon as I checked the thing out. Also, even though it is rather irrelevant at this point, your article cited the NMI interrupt as the possible culprit, but in my talk I referred specifically to the IRQ; the NMI line is not used in the 1541--it isn't even connected.

Although your recent CHUMP section is written just for fun, please don't use it to perpetuate myths. The first letter (from Prof Oldenglish) talks about an error in an index file. The response: nothing can be done. You and your knowledgeable readers find this funny because you know that usually all or most of the file(s) can be recovered. However, many of your readers will see this as a confirmation of the myth started by COMPUTE! that recovery is impossible. Please be a bit more careful.

-Dr. Gerald Neufeld

*Thanks for your comments. I was unaware that your thoughts about the @SAVE bug were tentative and untested at the time we published them, and I'm glad to have this opportunity to set the record straight. As for the CHUMP letter, you are, once again, correct. Experienced users know that most file crashes are recoverable with the tools and resources now available. (Resources which include Dr. Neufeld's own books, The 1541 Users' Guide and the classic Inside Commodore DOS, which he co-authored with Dr. Richard Immers). Irrecoverable file crashes and data loss remain one of the greatest fears of novice computer users, and we hope that your letter will serve to let them know that such files can usually be recovered with the right techniques.*

-Mark & Benn





ROADWAR 2000  
Strategic Simulations  
1046 N. Rengstorff Ave.  
Mountain View, CA 94043

INFO-rated



*Roadwar* is one of SSI's more unusual simulations: characteristically deep in statistical detail, but much more graphically colorful than most strategic "wargames". This is essentially the world of MAD MAX brought to the AMIGA playfield with the player leading a patriotic gang in a desperate search for eight key scientists. One nice feature that may broaden this game's appeal is an option whereby the computer quickly resolves the otherwise super-elaborate combat sequences thus allowing casual gamers as well as strategy fanatics to enjoy this futuristic nightmare. BD

TELEGAMES  
Software Terminal  
3014 Alta Mere  
Fort Worth, TX 76116

INFO-rated



This is actually a collection of 3 games: Backgammon (shown), Chess, and Checkers. Each game has both 2D and 3D versions and is designed to be played by two human opponents with the Amiga supervising, keeping score, preventing illegal moves, etc. The players may either take turns on the same computer, or play on two remote Amigas connected via modems over phone lines. An on-screen two-way message area is provided to allow opponents to chat while playing in this mode. Graphics, digitized sound, and player interface are all well done. BD

GALILEO  
Infinity Software, Ltd.  
1331 61st. Street Ste. F  
Emeryville, CA 94608

INFO-rated



An electronic planetarium (with a database of over 1600 stars), *GALILEO* is an ambitious product, even on the Amiga. Do your star-gazing on a high-res color screen from any spot on the planet or time in history (400 years back or forward). Tracking feature plots planetary movements over 60 day periods. Pick out deep space objects, show constellations with optional outlines, or learn to identify them using 'flashcard' mode. Good manual, but lack of 'real-time' motion plus frequent & slow screen refreshes detract from this otherwise well-done title. BD

MISSILE DEFENSE  
by Glen Merriman  
5602 Oak Trail  
Houston, TX 77091

INFO-rated



We saw this PD program up on the PeopleLink network. It's free, written in 80K of assembly language, uses BOBS, sprites, and IFF digitally sampled sounds. If you are looking for a very decent remake of the original arcade hit, this should fill the bill nicely (I'll let Glen worry about Atari's look & feel police!) The source code along with Glen's own ML monitor/disassembler and its source are also available for a modest \$5 fee. BD

EARL WEAVER BASEBALL  
Electronic Arts  
1820 Gateway Drive  
San Mateo, CA 94404

INFO-rated



I must confess that I am not a big baseball fan (I save myself for football season). You don't need to chew tobacco, tho, to see that this is the ultimate computer baseball simulation! Split-screen action, instant replays (with still-frame), radar-gun clocking of pitches, variable levels of play (including optional management responsibilities), and a page-long list of features and options allow casual players as well as certified baseball psychotics to find total gratification with this game. Now, how about *CHUCK KNOX FOOTBALL* for us pigskin proponents! BD

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Ramsey, NJ 07446

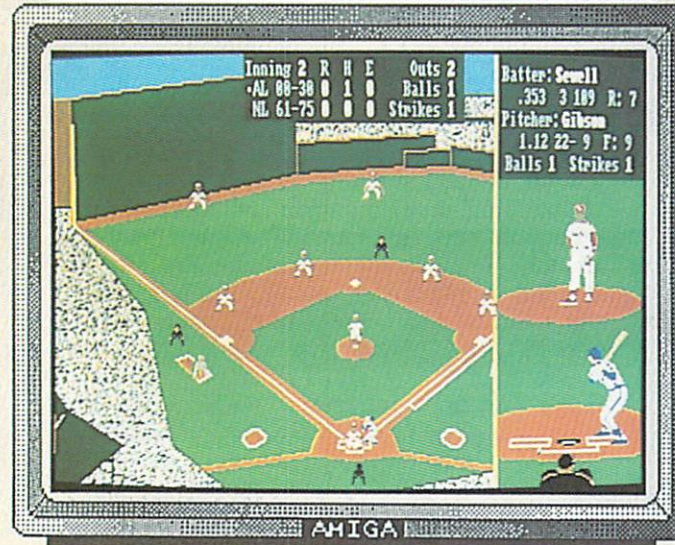
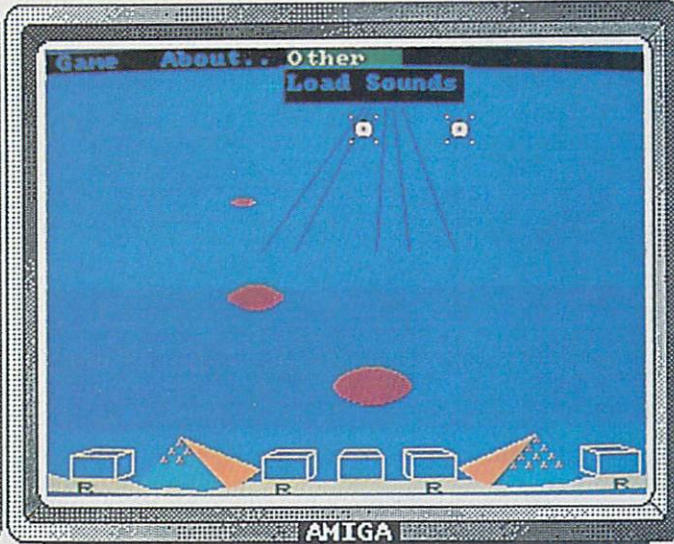
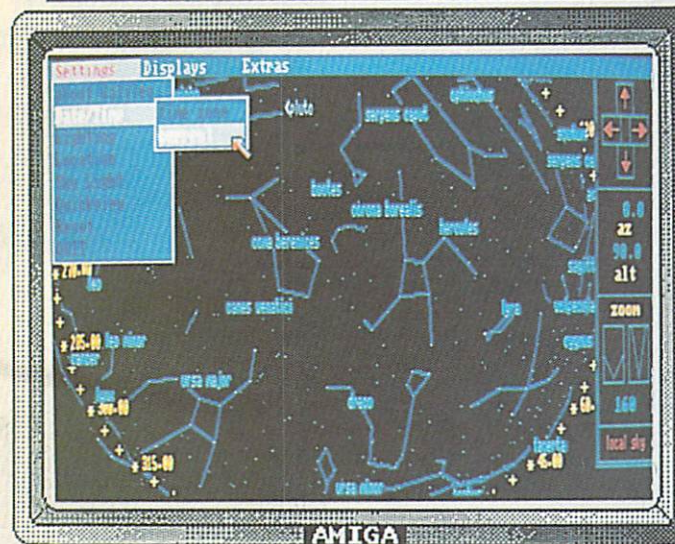
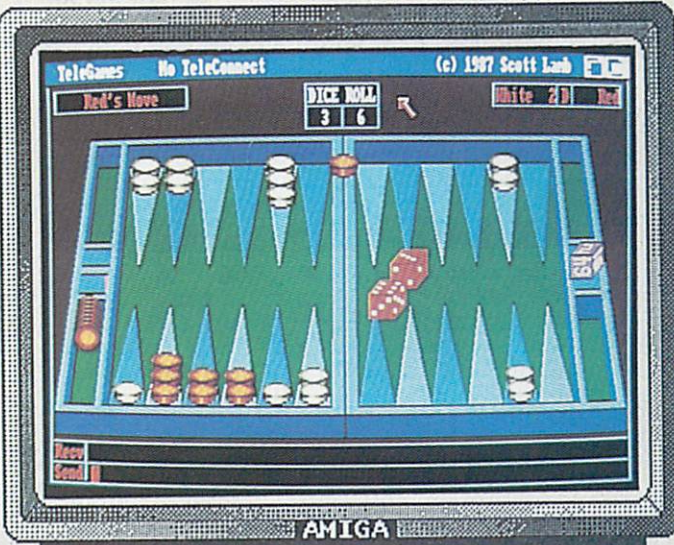
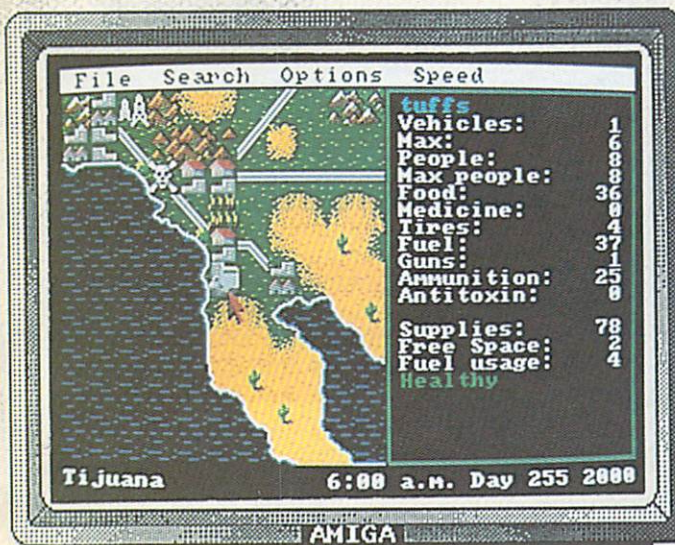
INFO-rated



Well, for all the ballyhoo and delays surrounding the Amiga introduction of this game, *STARGLIDER* is just an average gee-whiz fly-&-zap (read boring). Solid-modelling instead of wire-frame would have helped a lot, but even so, there is no depth to this lunger. I would much rather play Firebirds C64 version of *ELITE* (which would have been a much better project to undertake for the Amiga). Games like *S.D.I.* and *Arctic Fox* are already well-established and four times the game that *STARGLIDE* is on any level; bulk this idea, and give us Amiga *Elite*! BD



# THE GALLERY





**PIRATES!**  
MicroProse  
120 Lakefront Drive  
Hunt Valley, MD 21030

**INFO-rated**



Something different from veteran programmer, Sid Meier of *Silent Service* and *F-15 Strike Eagle* fame. This graphic simulation/adventure is set in the 17th century and allows you to play the part of an ambitious privateer in command of a salty clutch of buccaneers. The play alternates between pop-up option windows (will you fight with cutlass or rapier? etc.) and animated interactive sequences (dueling, sailing, etc.). *PIRATES!*, while pleasantly illustrated and fairly detailed, just didn't hold my interest. I liked EA's *Seven Cities of Gold* better. -BD

**DEFENDER OF THE CROWN**  
Mindscape  
3444 Dundee Rd.  
Northbrook IL 60062

**INFO-rated**



The C64 translation of *Defender of the Crown* is a real programming accomplishment. Though it obviously can't match the music and graphics of the Amiga version, this still comes across as one of the best-looking and best-sounding titles we've seen for the C64. And the gameplay is at least as good as it was in the Amiga version, if not better! It illustrates an unanticipated benefit C64 owners are getting from the mere existence of the Amiga -- better C64 software! -MB

**KUNG-FU MASTER**  
Data East  
470 Needles Drive  
San Jose, CA 95112

**INFO-rated**



If you are a martial-arts game fan, or have been through any video arcade in the last year or so, you have probably seen or played the coin-op version of this game. This is a multi-level progressive quest involving a variety of Kung-Fu opponents in hand to hand as well as armed combat. The screens and sequences are quite well duplicated in this home computer version, but two problems may spoil the game for you: the colors needed to duplicate the original cause some very blurry screens, and the joystick is so poorly read that at first I thought mine was broken. -BD

**DAN DARE**  
Electronic Arts (dist.)  
1820 Gateway Drive  
San Mateo, CA 94404

**INFO-rated**



Those wacky Brits are at it again, this time with a dapper comic book hero called Dan Dare. *DAN DARE* has a lot of things going for it: I mostly like the authentic Sunday comic-strip flavor which comes across with a wry sense of humor as well as a compelling sense of adventure. Dan battles the alien "Treens" in classic sci-fi settings while attempting to rescue friends Digby, and Professor Peabody. The joystick response is very temperamental in some spots, but overall, you stand a good chance of getting your money's worth from this novel diversion. -BD

**SKY RUNNER**  
Spinnaker Software  
One Kendall Square  
Cambridge, MA 02139

**INFO-rated**



It's been a long time since I have seen any games come out of Spinnaker, and if this is their choice for making a comeback, then I am convinced that they should seriously consider another line of work. Reminds me of Broderbund's *STEALTH* only even less exciting. This is about as boring as "fly & shoot" games get. I'm not even going to burden you with the usual descriptive text since you don't want to buy this game anyway. Maybe this is just the ultimate form of copy-protection: make your product so dull that nobody even wants it. -BD

**WARGAME CONST. SET**  
Strategic Simulations Inc.  
1046 N. Rengstorff  
Mountain View CA 94043

**INFO-rated**

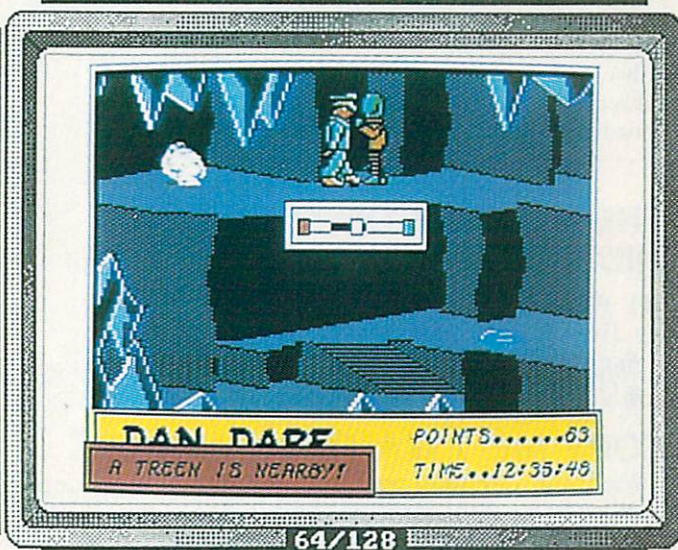
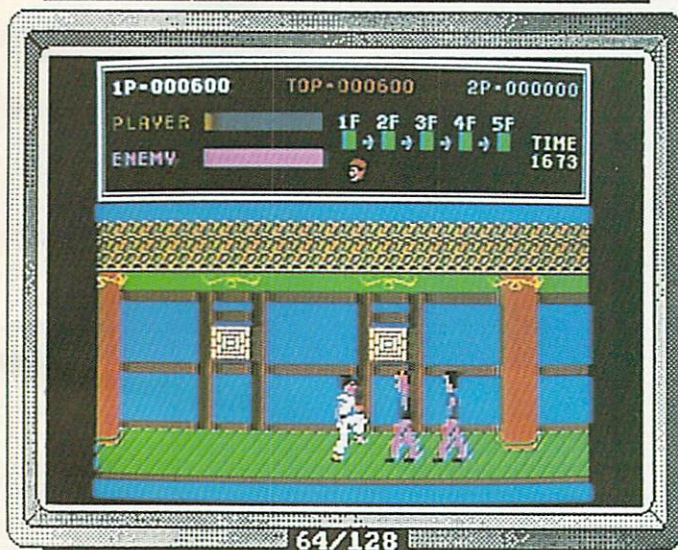
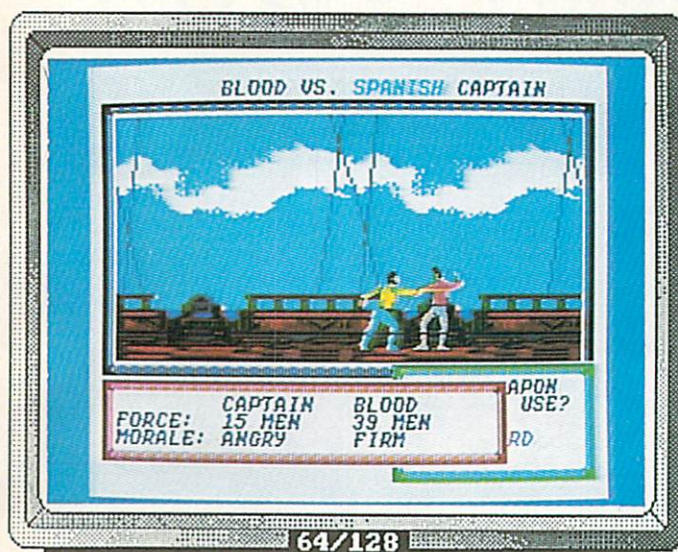


If you are a fan of wargaming and you've always wanted to try your hand at creating a simulation of your own, then buy this software! The hard part is all done for you--you just use the editor to draw playfield maps, assign unit capabilities to the playpieces, and position the pieces for play. You can create everything from fantasy games to WWII battle simulations with WCS, at scales ranging from individual combat to battalion-level battles. The disk includes eight sample 1 & 2-player games. -MB

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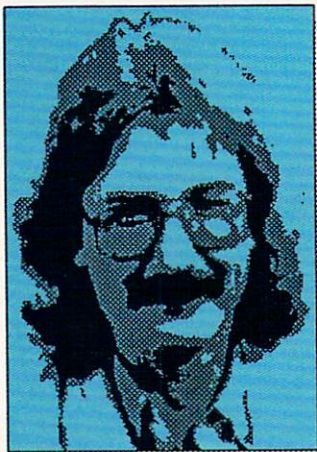


# THE GALLERY



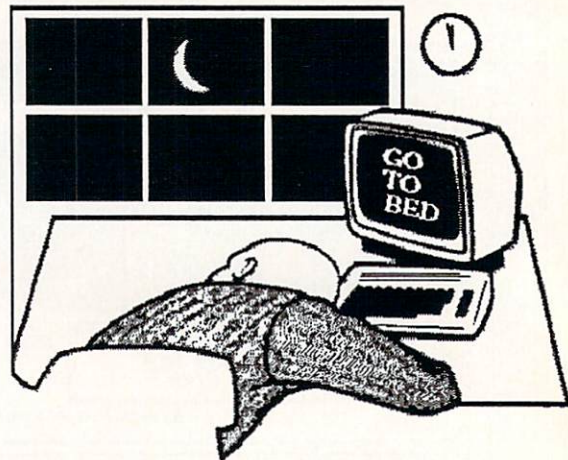


# Midnite Software Gazette



## ABOUT THE AUTHOR:

James Oldfield, Jr., is Vice-President of Micro-Pace Computers, Inc., Director of The Midnite Press, a consultant for Constellation Software, and a Commodore Guru, first class. You can reach him online at these EMail addresses:  
CompuServe--76703,4033  
QLink --Midnite



The opinions expressed in this column are those of the author, and do not necessarily represent those of INFO Publications, Inc., our staff, our lawyers, or any other living human being.

## THE HISTORY OF THE MIDNITE SOFTWARE GAZETTE

### MY PERSONAL VIEW

By Jim Oldfield, Jr.

*This is the second and final installment of Jim's history of the Midnite Software Gazette.*

### COPY ME. I WANT TO TRAVEL!

With the decision made to print a user group publication, Jim Strasma and I took the route most user groups take and started with a newsletter--all four pages worth! (Photocopying was inexpensive back then.) Our first mailing was to all the people we knew in the PET community, plus as many user groups as we could find. TPUG (the Toronto PET Users' Group) hadn't started printing a formal newsletter at the time, so we got together with them to help spread the word about Midnite by allowing them to reprint our issues. To defray the costs of postage, we asked people to send us

stamped self-addressed envelopes that we could, in turn, mail back to them as an issue was completed.

We decided to print four times a year--we weren't sure if people would take to Midnite. Jim Strasma's first Midnite editorial stated our goals:

*"Welcome to the MIDNITE SOFTWARE GAZETTE, an off-the-wall publication of the Central Illinois PET Users. (PET is a trademark of Commodore Business Machines, Inc.) It is our attempt to fill the vacuum in PET reviews since the PET GAZETTE folded a year ago. Until then, nearly every available PET program was reviewed quickly. Since, lots of PET programs have been offered for sale, but very few are reviewed. Some of the new programs are VERY expensive. Who wants to spend \$100+ on a program that may be junk? Who are we to do the reviews?...Just PET owners with lots of software. JS has written some published reviews. The rest have other writing experience. Between us, we have all models and varieties of PET equipment, except the 8032. We want PETdom to prosper. Good software will help. We will point you to it, and steer you away from trash."*

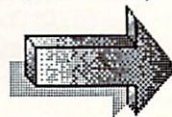
Almost prophetic, eh? To this day, Midnite has upheld this basic philosophy. With INFO the tradition continues.

On the bottom of that first issue and continuing through issue seven we had a slogan that became literally world famous: "Copy Me. I want to travel." And copy it, people did. After only a few issues we had garnered readers in forty-plus states and twelve countries--all this based on a simple principle of short, concise,

If you're a regular Midnite reader and you miss the writers you're used to seeing in the pages of Midnite, be sure to read Robert Baker's review of the MicroTroll elsewhere in this issue. We promise many more reviews by other Midnite regulars in the issues to come.

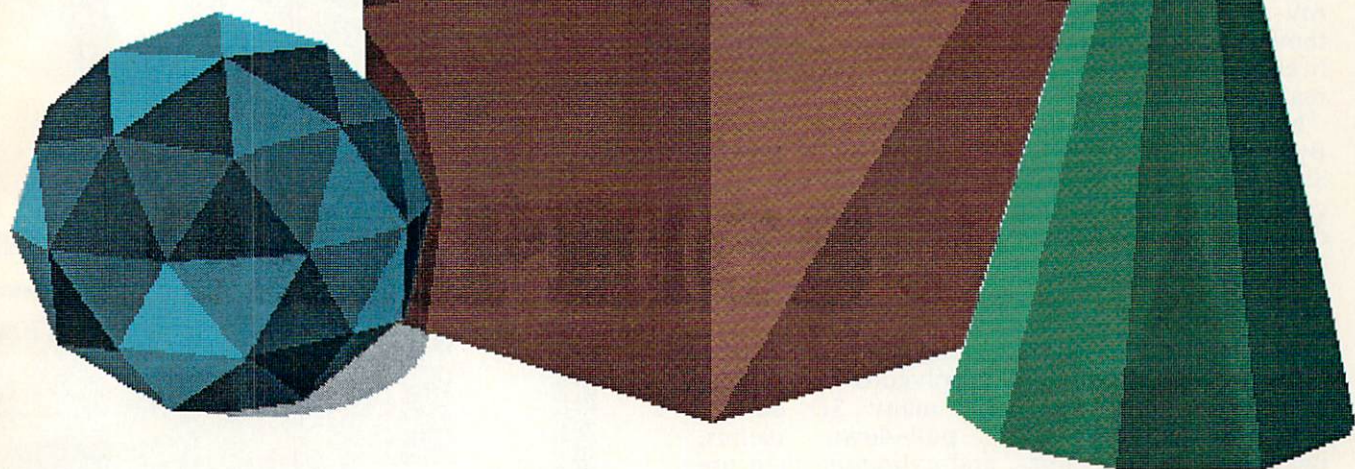
-Mark & Benn

continued on page 79...





# GRAPHICS RENAISSANCE



When the Amiga was first introduced, our socks were regularly knocked off by the incredible graphics it produced. The first few programs to take advantage of the Amiga's graphics capabilities looked so fantastic compared to what had come before, we just couldn't help being blown away. But after the first few months, we began to take great graphics for granted. We expected them. After all, this wasn't an IBM or a Macintosh, this was the *Amiga*! Our socks remained in place for awhile.

Then, just a short time ago, we were hit with a new wave of Amiga software which exploited aspects of the Amiga's graphics ability that no one had ever seen before. Our socks were blasted into orbit! All of a sudden, we were inundated with displays of intricate and colorful mathematical patterns, animations of juggling three-dimensional robots, and pictures of subtly-shaded scenes the likes of which had never graced a personal computer screen. It marked the beginning of a new wave of graphics activity in Amiga computing, a veritable Graphics Renaissance.

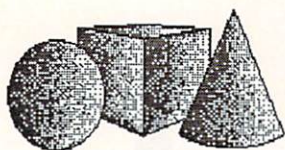
For the first time, innovative and sophisticated new software for the Amiga is opening up areas of the computer graphics field that had been the

realm of isolated computer graphics laboratories. Without access to a \$10,000 Sun workstation and a VAX minicomputer, these things were impossible before. Now, the exploration of the Mandelbrot set, the generation of lifelike raytraced images, and the creation of incredibly colorful and detailed computer graphics are experiences that everyone with an Amiga and an imagination can share in.

This article is a brief overview of some of the fascinating new graphics tools for the Amiga. Some of them allow it to function in areas that only an expensive dedicated piece of equipment could manage before. Others just let you have more fun with your computer. In any event, we think they prove that the Amiga is just beginning to fulfill its promise.

And who knows what new tools will come next? And with them, what new things will we do? We have had tools for our hands for thousands of years, and with them we have created an intricate technological society. With the proper tools for the mind and the imagination, there is no telling what we might come up with.





# SCULPT 3-D

...continued

Almost everyone is familiar with Eric Graham's public domain **Juggler** demo for the Amiga. It really shows off the Amiga's power to perform graphic feats that were previously only within the capability of minis or mainframes. The Juggler was created with the aid of a complex graphics generation technique known as *ray-tracing*, which actually traces the paths of thousands of simulated light rays to produce a lifelike three-dimensional picture, complete with realistic shadows and reflections.

Now Graham has teamed up with the folks at Byte-by-Byte to bring raytracing to the masses. **Sculpt 3D** (\$99.95) follows in the footsteps of a couple of powerful but difficult-to-use public domain raytracing programs, including one by Graham himself.

The user interface of **Sculpt 3D** makes creating and editing 3D shapes an easy task. The editor works in three windows, letting you place points and create lines and polygons in three dimensions. You can pick many 3D objects ready-made from the pull-down menus, including spheres, cubes, and cylinders, then use a "magnet" to stretch the shapes into new forms. There are some very interesting functions, like *unslice*, which lets you define plane slices of a complex form, then have the program connect them to form the complete object.

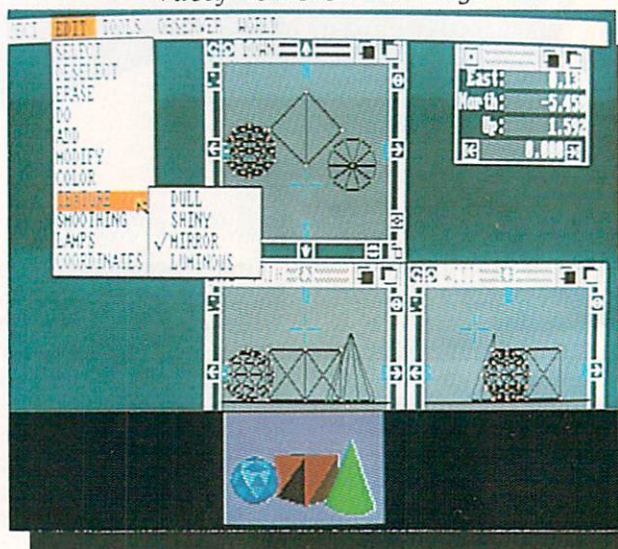
Once you have a shape defined, you can manipulate it in many ways. You can subdivide surfaces for greater detail, delete and add points, lines, and surfaces, change the color of selected planes, move the objects around, etc.

When you are ready to look at your work, you place light sources of whatever color and intensity you want, select background illumination and world characteristics, and set a point of view. You can choose a quick display for previewing your work, then show the raytraced display in a small window for a preview of the final picture. When you're ready for the full view, make the menu selection and go to bed--most pictures of any complexity will take hours to generate. This is the nature of raytracing. Even a VAX minicomputer takes a similar amount of time. The results, however, are worth the wait.

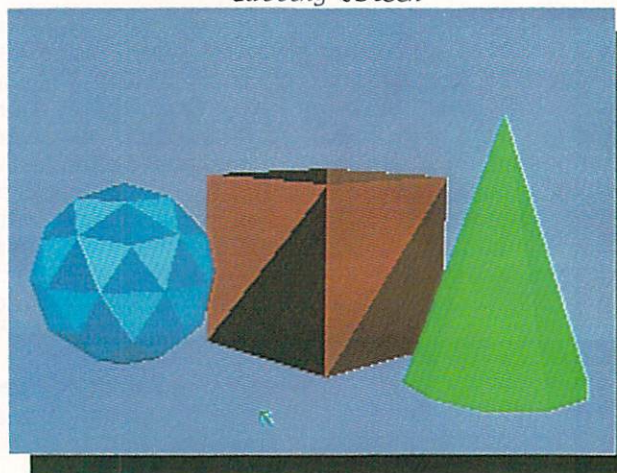
This is a very powerful program with lots of features and a nice user interface. Byte-by-Byte is also planning to offer an animation package that will let you produce Juggler-style animations using **Sculpt 3D**-generated pictures.



Fully rendered HAM image

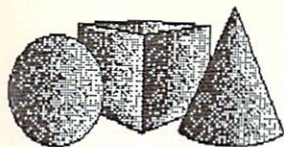


Editing screen



Paint mode (quick preview)





# DIGI PAINT

IBM and Apple are making a big deal over the ability of their new PS/2 series and color Mac models to display 256 colors at one time. But did you know that the Amiga can display 4096 colors at once? Most Amiga programs we've seen so far have been limited to 32 colors because they use traditional color graphics techniques. But the Amiga has a special display mode called *Hold-and-Modify (or HAM)* that can display every color the Amiga is capable of producing, all at once.

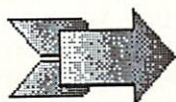
NewTek's Digi-Paint (\$59.95) lets you produce original drawings or import IFF pictures for colorization with the full range of Amiga HAM-mode colors. The results can be spectacular. You can even combine several normally-incompatible Deluxe Paint pictures and display them on one screen with all of their original colors intact!

The tools that Digi-Paint provides are geared mainly for the modification of pictures you've already created with your favorite 32-color drawing program. Many of the standard drawing program features like text, curves, symmetry, and such are not provided. In their place are a lot of options for various types of tinting, blending, shading, and otherwise modifying and enhancing colors. While it is possible to create works of art directly with Digi-Paint, we think most people will use it as a colorization and special-effects tool.

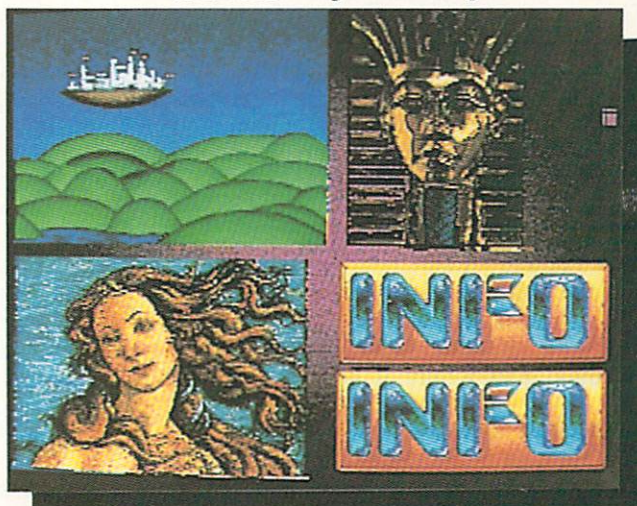
The effects you can get with this package are downright dazzling. For example, it is possible to overlay a transparent light or dark color tint on any area. By overlaying areas of light tint, you can create transparent fabric effects. The shading feature makes it possible to achieve really fine dithered and blended fleshtones and highlighted shiny color effects; you can select the amount of dithering and even the placement of the perceived lightsource. With the *subtract* and *add* functions, you can individually adjust the amount of red, green, or blue in an existing area. You can also get some very interesting effects using the logical *and*, *or*, and *xor* functions. You can even load up two pictures at once and blend portions of the background picture into the foreground picture. The *again* function lets you combine several effects in the same predefined area.

We've been blown away by some of the effects we've already been able to add to our artwork with the tools that Digi-Paint provides. It's the electronic equivalent of an airbrush, and more.

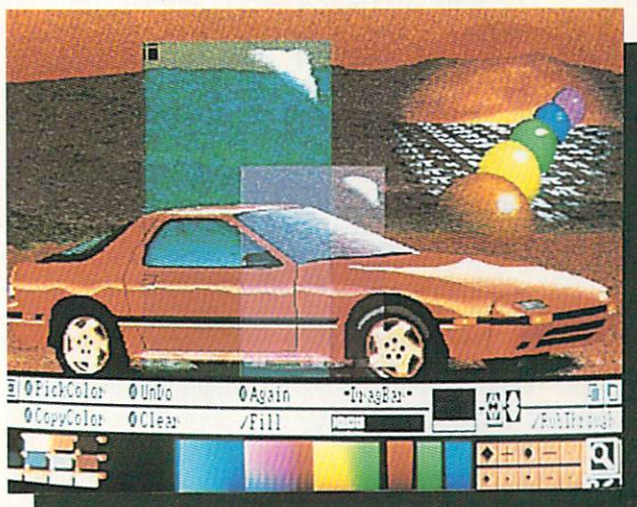
*continued on page 90*



*Colorized DigiView image*



*Four DPaint screens at once!*



*Controls, tinting, and rubthrough*



# the History of INFO, Part II

by Benn Dunnington

*In the last issue we told the story of INFO Magazine's conception and early origins. When we left off, our undaunted publisher was finally ready to print issue #1, but had run out of money.*

## Hurray for Credit Cards!

I had optimistically ordered 20,000 copies for the first run of INFO=64 (I only had orders for 7,000 but I was hoping for a big response with lots of reorders and sales of back-issues. As of this writing, we still have a couple hundred copies left!) My printer wanted \$3500 in advance to print Issue #1, and with less than 1/10 that in my bank account, I experienced my first wave of terror- maybe this wasn't such a hot idea after all. Then I remembered that I had recently received, unsolicited, 2 pre-approved VISA cards thru two banks in distant cities (I guess 7 years at one job is good for something!) This was obviously a sign, and after rechecking my Calc-Result spreadsheet on my C64 one more time (yep, it ought to work), I took a deep breath, walked into a local bank, and maxed-out two virgin VISA cards for \$2000 each. The presses rolled, I reacquainted myself with my wife and kids, had a couple of very delicious beers, and tried to figure out what I had gotten us into, and where it was going to go.

## Altered States

A couple of weeks later, the finished magazines were done, and a truck pulled up to my garage with 2 1/2 tons of INFO=64s: crammed into my one-car garage, they made an impressive stack! Now for a solid week, I became the shipping dept.- counting, wrapping, and weighing each bundle of 5 or ten, and hand-entering each package in the UPS book (I didn't learn about manifest shipments until several issues later.) I would occasionally stop and flip open a copy from a freshly opened carton: It was weird- now that the thing was done, it was almost like someone else had written those pages- I could even read the reviews and find myself wondering what the conclusions would be (after 16 issues, I still sometimes get that sensation!)

## Games People Play

I originally wrote #1 in the first person but then decided to try to disguise the fact that INFO was the work of only one author, fearing that it

wouldn't be taken seriously. To accomplish the illusion, I used my (then) current wordprocessor, WORDPRO, to search and replace 'I' with the more convincing corporate 'we' (this resulted in my first lesson in the perils of wordprocessing as I later read (with horror) phrases in my otherwise literate text like, "We am very excited about...", etc.) I also used phony names for some of my reviews (who was that Arby Fuller guy?), and left others with no byline at all.

As soon as the issue was shipped, I went to one of the computer stores in the area which had ordered issue #1 and stared at it on the shelf next to **Commander, Run, Ahoy, and Gazette**. I tried to imagine how it must look to customers and fellow computists seeing it for the first time.

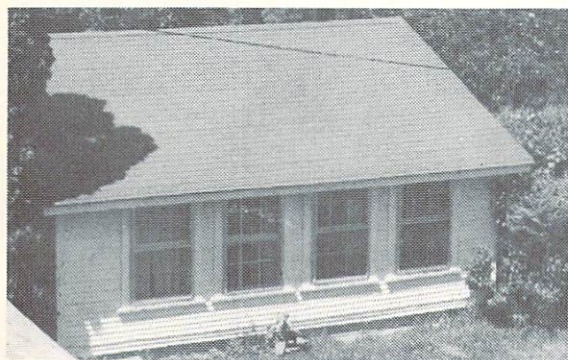
I decided that it probably looked pretty crude and that the corporate "we" was fooling nobody. On the other hand, I saw that there was just the kind and quantity of solid information, casual conversational style, affection for the technology, and irreverence for the stuffed-shirt side of the industry that I had been looking for myself in a computer magazine- I just had to hope that others would feel the same. I also realized with growing elation that I had actually "done it"! I had shown (at least to myself) that these marvellous new machines could really work magic, and enable one fumbling humanoid to entirely produce and manage a saleable national publication out of a spare bedroom. A warm sense of pride and accomplishment began to spread over me, and then I realized- it was time to get started on Issue #2!

## Reality School

One of my big problems as a would-be publisher was (and to some extent, continues to be) an unrealistic optimism and naivete'. I had originally thought that I could produce INFO on weekends and evenings (ha ha). Then, when I was working sixteen hours, seven days a week on it, I thought I could get an issue out every 3 months (try 4). I remember being so far behind with Issue #3 that to finish it by the 5th or 6th deadline extension, I ended up working the last 4 days and 3 nights (88 hours) without sleep (something I didn't know was possible, and which I plan never to do again- talk about altered states!) I was also unprepared for the number of computer dealers and software companies which went out of business every month, many of them owing INFO money which was badly needed to stay afloat. Even more surprising was the occasional advertiser or magazine dealer who would just decide not to pay for a carton of magazines or a page of



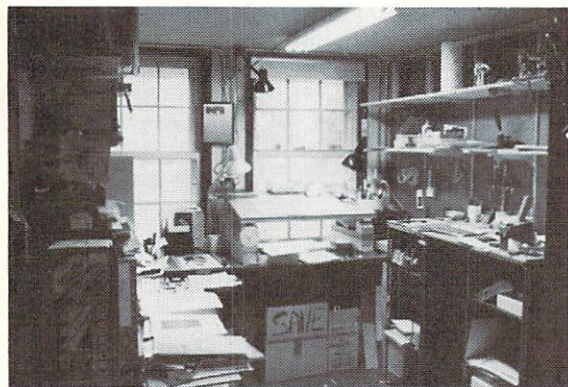
## the Chicken Coop Era



The Chicken-Coop in Iowa City;  
Secret International HQ during issues #4-#9



The publisher's cockpit, inside the Coop.



The production department: always a  
great view of the neighbor's cattle!

advertising. I learned about Chapter 11 bankruptcy and how a retailer could owe hundreds of dollars and be legally excused from paying his bills while still selling his inventory of products and keeping the proceeds for himself. I learned that the more indignant an advertiser is about not being extended credit, the more likely he is to stiff you if you do extend credit. I learned that no software company is so big or so successful that it can't go down the tubes in the blink of an eye.

## Changes in Latitude...

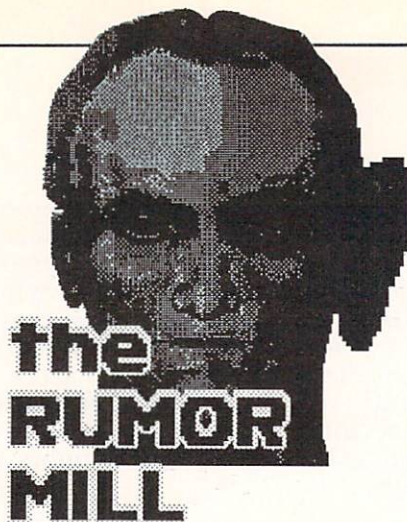
After Issue #3, INFO had gotten into the B. Dalton chain, I had discovered the hand-waxer (don't even think of starting a magazine without one), and it looked like the magazine was going to work. My wife and I realized that we could publish INFO anyplace in the country that had electricity, telephone service, Federal Express delivery (and wax), so we moved to Iowa City. We bought an old farm house, converted the chicken coop out back into the new secret international headquarters for INFO (see photos), and I had the welcome luxury of two people helping put out the magazine- my brother, Scott, and Deb, a good friend from Seattle. I also had some great outside writers starting to contribute their talents, including Mark Brown, who just happened to live 'down the road' in Burlington. Mark later came on permanently around Issue #8 as Senior Editor, and his fine writing, technical smarts, organizational skills, and background as a heavy equipment mechanic, have contributed enormously to making INFO what it is today.

## And Just What is That?

Today INFO is read by over 100,000 Commodore and Amiga enthusiasts worldwide. INFO is still "hand-made" (now in TWO spare bedrooms) by a full-time staff of 4 dedicated computists using only consumer-grade Commodore, Amiga, and compatible 3rd-party hardware and software. We are still the only Commodore or Amiga magazine which is entirely produced and managed with this equipment (*Amazing Computing* is computer produced- but on a Macintosh!). INFO is currently regarded (even by many of our competitors) as the hardest-hitting, most irreverent, pathologically honest, entertaining, and information-packed Com/Am publication available without a prescription. INFO thanks you one and all for the faith you've shown and the support you give which makes a magazine with these ideals possible today, and likely to be here in the years to come.







**DISCLAIMER:** The following are among the most entertaining rumors we've heard the past couple of months. They are presented for your entertainment and amusement only. Please do not base any important decisions on these rumors, as many will prove to be inaccurate or just plain false.

-> We hear that the C128D may ship with 64K of video RAM for the 80 column mode. This would allow the generation of super hires graphics screens of 640x400 resolution in sixteen colors. If true, the new BASIC 8.0 from Patech supports expanded video RAM, so it could be used in BASIC programs right away.

-> Apparently early versions of the 1764 RAM expander are having a problem working with some C64 systems. Commodore is said to be working on a fix.

-> If you own the C64 version of EA's Music Construction Set and a 1660 autodial modem, try loading up MCS with the modem connected. Rumor has it that the program will dial the operator and play Mendelsohn's Scherzo. (We tried it with a 1670--no dice!)

-> We hear that the A500/A2000 supply a +5v voltage at pin 14 of the parallel printer port that is not usually supplied, and that this may cause a problem with some printers if you use an off-the-shelf IBM printer cable. The solution? Get a custom printer cable (again?) with pin 14 disconnected.

-> We hear that Commodore Magazine was recently put up for sale by Commodore, but was pulled off the market shortly after the first bids were received. Among the bidders? CW Communications...

-> Nothing is firmed up at presstime, but the Rumor Mill is abuzz with stories of trade-up deals for the A2000 and A500. The most probable of the two says that an A1000 will be good for \$1000 off the price of an A2000 (list price: \$1995). That should make all those who bought A1000s early on very happy! Even late-comers will be able to buy a used or refurb A1000 at the last minute for \$500-\$600 and trade it back unopened for a savings of a few hundred bucks. What's Commodore going to do with all the trade-in A1000s? The story says

they'll refurbish them and offer them to schools at a low price with a big 4-for-3 discount.

-> The rumored A500 deal has a C64/C128 trade-in good for a free copy of WordPerfect when you buy an A500. I hope this one doesn't come off...it makes more sense to put it in the back bedroom for the kids, or even donate it to the school. That way it stays in circulation and somebody gets to use a great computer instead of having it sent off to the West Chester landfill. (You just can't refurb a \$100-\$200 computer.)

-> Commodore is said to be talking to *two* different companies about a C64 emulator for the Amiga. There is a good chance that one will eventually bear the Commodore label, and it *might* even be bundled with the A500.

-> We hear that the last A1000s were built a few months ago, and those are almost all sold. A source close to Commodore recently told INFO "the last 350 are in a warehouse in California, with no plans to build any more." Despite Commodore management's protests to the contrary, we just don't see where the market exists for an A1000 now that the A500 is out and the A2000 is close.

-> It's also rumored that the A500s are being assembled on what *used to be* the C128 assembly line...

-> A source inside Commodore says "the A500 is half as complex to assemble as the C128". Their claimed assembly capacity? 2000 units a day.

-> One industry bigwig is speculating that the price of a used or refurbished A1000 may hit the \$200 mark once the A500 is widely available.

-> It is claimed by one software company executive that the latest and greatest in software technology for the Amiga centers around two concepts: 100% 68000 machine-code programming, and state-of-the-art data file compression. The combination of the two is said to make possible CD-ROM style realtime computer animation from standard Amiga floppy disks. Look for it in the next generation of Amiga software, due out later this year.

-> Commodore magazine reportedly refused to run Patech's ad for BASIC 8.0, saying the ad did not portray the C128 in its "best light". Huh? Seems to us that BASIC 8.0 is one of the best things to happen to the C128.

-> We hear from a source inside a big software developer that Atari has told them "the future of Atari is in our IBM clones." Uh-huh. Maybe that explains why the Mega ST was absent from CES.

-> We understand that Tim Jenison at NewTek wrote most of the code for DigiView before he ever got an Amiga...on a Radio Shack Color Computer! He wrote the 68000 assembly code and transferred it to the Amiga via the serial port using an ABASIC program.





## COMMODORE TOLL-FREE

We've seen several reports in user group newsletters recently about a reactivation of Commodore's late-hours toll-free customer support hotline. The rumors are false, and unfortunately all the articles have reprinted the number that Commodore had over two years ago, which has since been reassigned to another company. 800-247-9000 is emphatically **not** the number of Commodore Customer Service. That number in West Chester (*not* toll-free) is 215-436-4200, during normal weekday business hours.

## THE COMMODORE SHOW

The Commodore Show--Anaheim will be held on Saturday and Sunday, October 3 and 4, at the Disneyland Hotel in Anaheim CA. The show will be open daily from 10:00 a.m.-6:00 p.m. Besides many displays by Commodore and Amiga third party developers and retailers, the show will feature talks by Commodore experts. For more info on attending or exhibiting at the show, call 200-722-7972 or 408-978-7927.



## BRODERBUND VALUES

Broderbund has cut the price of several of their popular older titles in half. Two **Bank Street** titles, **Mailer** and **Speller** will each sell for \$24.95, and **Bank Street Filer** will now cost \$29.95. The price of **Lode Runner** and **Karateka** will be \$14.95 each, and **Choplifter** and **David's Midnite Magic** have been bundled on opposite sides of a floppy disk at a price of \$14.95 for the pair. This is the latest in a recent trend towards making older 'Classic' titles available at reduced prices, a trend we hope the industry continues!

In a related announcement, Broderbund is reducing the price of **Toy Shop** for the C64 from \$59.95 to \$39.95. The price of the refill kit has been reduced by five bucks to \$19.95. Good move! At nearly sixty bucks, this fascinating cardboard-toy creation system was way out of reach for most C64 owners. With the usual discounts on software, you should now be able to pick up the **Toy Shop** for about \$30-\$35

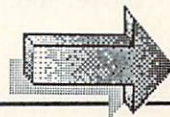


## MICROPROSE GAMES BANNED

The West German government has banned three of MicroProse's top computer entertainment titles from West Germany. **Silent Service**, **F-15 Strike Eagle**, and **Gunship** have all been banned under the provisions of a West German pornography law. Pornography? Under the auspices of the West German National Examination Board, the interpretation of the law spreads to cover "excessively violent" entertainment, also. Their official pronouncement on the MicroProse titles called them "morally corruptive and coarsening for the young user". Asserting that their titles do not glorify war, MicroProse has filed an appeal on the pronouncement. If they are unsuccessful in their appeal, the games will remain on the Youth Dangerous Publications List, which will prohibit sales of the games to minors in West Germany.

## SEARCHLINK

The friendly folks at CW communications (publishers of **Run** and **AmigaWorld** magazines) have established an online database service called **Searchlink** that will allow modem users with a healthy line of credit to hook into a wide range of online data services. The service is not cheap at \$7.99/access plus \$.25/minute (with some surcharges), but there is no signup fee and you can access medical, governmental, and professional databases all over the country via this one service. You can call up both abstracts and full-text articles from many major metro newspapers and trade journals, access census data, and even check out indexes of selected computer magazine articles. Connection is via a toll-free number, but have your credit card handy when you dial (800) 843-7337.





...continued

## EPYX TAPS AMIGA EXEC

David Morse, who was co-founder (along with Jay Miner) and CEO of Amiga Corp. before Commodore bought them out, has been recruited as the new chairman and CEO of Epyx. Whether this means Epyx will now commit more resources to Amiga development is anybody's guess, but it sure can't hurt to have one of Amiga's Founding Fathers at the helm of the company!

## COMMODORE MARKETING

While we're on the subject, sources close to Commodore tell us that Commodore's new commercials and magazine ads will concentrate on real users and what they are accomplishing with Commodore machines. We hear that places like Palomar Observatory and the Ohio State Computer Graphics Lab may figure prominently, and there may even be some ads featuring musicians and artists who are using the Amiga in their crafts. It sounds like a great campaign!

## FCC AT IT AGAIN

Peggy Herrington reported last issue that the FCC had turned down a proposal put forward by AT&T asking for a communications surcharge for packet switching networks. Well, it seems that the proposal has reared its ugly head again, and may actually be approved this time. If the proposal is approved, it will mean communications surcharges of \$2 to \$10 an hour (depending on who you talk to) for all long-distance interstate telecommunications. This would effectively write an end to the economic feasibility of personal telecommunications via services like CompuServe, QuantumLink, and GEnie. If the proposal is approved as presented, surcharges for all interstate telecommunications would go into effect next January first. (Local bulletin board systems would remain unaffected.) Though Washington in general, and the FCC in particular, are notorious for not listening to the voice of the people, we would encourage you to harass your congressman and the FCC about this one. A nice letter to AT&T threatening to move your long-distance service to another company if they don't withdraw their proposal might be a good move, too.



## SCREEN-TO-SLIDE SERVICE

Slide City (6474 Highway 11, DeLeon Springs FL 32028, 904-985-4594) will make slides of any Commodore 64 or Amiga graphics screen for \$3/each, postage paid, with no minimum order. Send in your Amiga disks with the screens you want slides of saved as IFF files (any resolution, including HAM mode) and indicate how many copies of each you need. C64 owners should send graphics files with a display program on the disk or, programs with notes explaining in detail which screens should be converted. Disks will be returned with your order. The sample slides Slide City included with their brochure and press release look super!

## AMIGA IN THE MEDIA

The Amiga is the new darling of the video production world--it's showing up all over the place, not only as a production tool but also as a prop in many of the latest video productions. Here are some of the ones we've noticed:

The Amiga can be seen running the Workbench demos for just a second in the corner of the screen on a recent Kudos Granola Bar commercial.

Tom Petty and the Heartbreakers' latest video "Jammin' Me" features the Amiga running the Juggler demo and briefly shows it running Marble Madness. Amy herself also gets doused with a pail of water in this one! By the way, there is a line in the song that mentions computers, but it has to do with the Apple!

Other appearances you may have missed this season include: Miami Vice (several times as a crime computer), Our House (an episode in which the son gets an Amiga), Saturday Night Live! (in a sketch, with Amy portraying a Xerox computer!), and Amazing Stories (a guy gets drawn right into his Amiga). Dozens of Amigas are also being used on local access cable channels to generate title screens, and by local TV stations to produce weather maps.



## COMPUTER LAWS

Our state and national legislators are focusing more of their attention on the complicated issues involved in computing and telecommunications. Among the issues recently before the state and national legislatures:

A proposed amendment to the constitution of the state of California would guarantee the rights of privacy and freedom of expression for electronic communications. It would prohibit any law abridging the rights of citizens to access to electronic communications.

A bill before the Massachusetts legislature would require software to function as advertised. If it failed to work, the publisher would be required to provide a working copy or refund the purchase price. The law would further make the vendor responsible for damages suffered by use of the software. (Most software is now sold with a complete disclaimer of warranty.)

The Illinois legislature is moving to repeal a 1985 shrink-wrap law in the wake of a Louisiana court decision which declared such licenses invalid.

The computer software industry is pushing hard in Washington to restrict software rental. For the third time since 1984, a bill has been introduced in the House to require rental houses to first obtain permission to rent from the publisher. The Computer Software Rental Act (HR 1743), if passed into law, would effectively kill the software rental business.

## MAC SOFTWARE SALES DOWN

Sales of Macintosh consumer software has been declining over the last year and a half as Mac sales have moved from the home into the business environment. Industry analysts predict that the more business-oriented features and price of the newest Mac models may spell even more trouble for the Mac games and educational software market. Many companies, including Epyx and Electronic Arts, are now backing away from investing heavily in Macintosh entertainment titles.

## EA TO HANDLE GRIDIRON

Bethesda Softworks has joined Electronic Arts' Affiliated Labels program, and EA has taken over distribution of Bethesda's **Gridiron 1.2**, an enhanced version of the original **Gridiron**, an AI-based football simulation game for the Amiga. Improvements include changes to the artificial intelligence routines, improved graphics sequences, and an enhanced playbook. The suggested retail price of **Gridiron 1.2** is \$59.95.



## MINDSCAPE ON THE PROWL

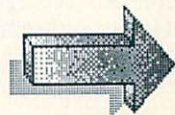
Mindscape has in recent months acquired CBS Software and launched a line of low-priced European import software under the Thunder Mountain label. According to Mindscape President Roger Buoy, they are still actively looking for more acquisitions and companies to add to their "Associated Companies" program. They have a lot of catching up to do if they are planning on playing the Acquisition Game with Activision and Electronic Arts.

## WORLD OF COMMODORE SHOW

The Toronto World of Commodore Show will be held the weekend of December 3-6 this year. This huge consumer show is billed as the biggest Commodore show in the world. Last year's show featured 380 exhibitors, and almost 40,000 attended. For more info on exhibiting or attending, call 416-595-5906.

## SOFTWARE PATENTS

The latest trend in the "Look and Feel" lawsuit jungle (see the INFO Editorial this issue) is for software companies to seek not only copyrights, but patents for their programs. Patent protection is much tougher, and effectively locks out other companies from producing software with a similar function. Most experts agree that titles that are as innovative and trend-setting as VisiCalc are patentable. If the original developer of VisiCalc had sought patent protection, that would be the only spreadsheet program available today. The U.S. Patent Office has already approved patents for software incorporating artificial intelligence algorithms, and for a program that translates Russian to English. More are sure to follow as the software industry becomes more patent-conscious.





### EPYX SEZ EXECS PLAY

Epyx recently conducted a survey of business executives which reveals some very interesting statistics. They polled 750 computer-using execs and found that 66% of them use their office computers for some non-work-related activities. Most wrote personal letters or spreadsheeted personal finances. 57% of them used their office computers to play games. 34% were doing such things during working hours, and 87% after hours. Let's see...that means that 13% of all business executives are playing games on their computers during business hours instead of working. Just as we suspected.

### COMPUTE! PC MAGAZINE

COMPUTE! Publications has announced they will launch a new title called **COMPUTE!'s PC Magazine**, aimed at the IBM-PC and MS/DOS market. The magazine, which will start with a September issue available August first, follows the format of **COMPUTE!'s Atari ST** magazine in bundling a program disk (with a choice of either 5.25" or 3.5" PC format) with the magazine. The price of the new bimonthly publication will be \$12.95, or \$59.95/yr. To get the issue off the ground, **COMPUTE!** is using the same promotion they used in launching their ST title: a programming contest. The contest will award \$15,000 in prizes to the best programs submitted for publication in the new magazine. Of course, all this raises an important question: With **COMPUTE!** publishing specific magazines for Commodore, the ST, and PCs, as well as occasional Apple specials, what's left for **COMPUTE!** itself to cover?

### HAYES MODEM SUIT

The lawsuit filed by Hayes Microcomputer Products against U.S. Robotics, charging infraction on the Hayes modem command set, drags on in San Francisco federal court. New twists and turns keep extending the case, and it is still unclear as to whether the Hayes command set, widely used as a standard in the telecommunications industry, will be declared the exclusive right of Hayes or not. If Hayes is the victor, makers of Hayes-compatible modems (including Commodore) will have to pay a license fee (perhaps retroactively) for use of the Hayes command set.



### INFO NETHERLANDS?

We've been surprised more than once in the past by folks claiming to have seen a Dutch version of **INFO**. Well, it turns out that there really *is* a Dutch **INFO**. It has nothing in common with us except the name. *Commodore INFO* is the actual full title of the Dutch version, and it's the premier Commodore-specific publication in its country of origin. Hmm... Come to think of it, that's *two* things we've got in common.

### HOME BASE

According to a recent industry survey, 14% of American families now own a personal computer. That's up from only 10% a year ago. Of those who do own a computer, 27% own Commodores. Commodore's installed base in the home has slipped a few percentage points these last couple of years, mostly due to the influence of MS/DOS machines in the workplace and the recent influx of inexpensive PC clones. Commodore's own lack of aggressive marketing has also cost them in the "intent to buy" category, with only a few percent of those intending to buy in the next few months indicating that they will choose Commodore. We think that Commodore's new marketing push will help to bring those percentages back up.



## ACCOLADE VET TURNS 360

Tom Frisina served as CEO of Accolade during the period in which they introduced Mean 18, Ace of Aces, and Hardball. He has now formed a new company called Three-Sixty, which will concentrate on developing and marketing software entertainment titles. Among the first titles will be versions of the popular Macintosh arcade game **Dark Castle** for the Amiga and the C64, a new C64 flight simulator, and some other unspecified game titles. The **Dark Castle** conversions are expected by August, and all should be available by the end of the year.

## COMMODORE COUNTERSUIT

Shortly after Commodore president Tom Rattigan resigned last April, he sued Commodore for \$9 million, charging he was "forced" to resign. Commodore has now filed a countersuit, charging Rattigan with disobeying the instructions of the board and not keeping close enough rein on the company's finances. Commodore's lawyer has also revealed that Commodore had initially offered to settle Rattigan's contract dispute for \$2 million before he filed his suit.

## ACTIVISION

## ACTIVISION POSTS LOSS

Activision has posted a total loss of revenue for its fiscal year 1987 of \$14.6 million. They attribute the loss to 'restructuring' they have undergone in the last year, writing off the R&D costs of some cancelled projects, and acquisitions aimed at improving their "product mix". In an effort to curb further losses, Activision is trimming back on the number of new titles it expects to introduce in the coming year. Activision's new president, Bruce Davis, who assumed the post only in mid-January, says he expects the company to go into the black "by the end of the year".

## WOZNIAC FUNDS HACKERS

Steve Wozniak, the creator of the Apple II, has funded a scholarship at Colorado for Hackers. As the Woz says, "You can really learn a lot trying to break codes and find access numbers..."



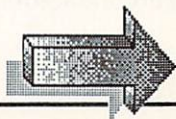
## Central Coast Software

### C64-TO-AMIGA FILE TRANSFER

Central Coast Software sells **Disk-2-Disk** (\$49.95) which will allow the Amiga to read 1541/1571-format files using the Amiga 1020 5.25" disk drive. But what if you don't own that \$300 piece of hardware? Well, now Central Coast is offering a file transfer service. For a \$15.00 service charge plus \$6.50 per disk, they will perform the translation to Amiga format disks for you. If you are stuck with a great deal of data you just have to get into your Amiga from your C64, this service could definitely be worth the money. (Remember: it's for text files only. It won't do you any good to try to transfer your favorite games onto Amiga disks--they won't run!) To save money, transfer files around and fill your disks up to the max before you send them in. If you have access to a 1571 drive, you can copy two 1541 disks full of text files onto one 1571 disk and save half the conversion fee. Contact Central Coast Software, 268 Bowie Dr., Los Osos CA 93402, (805) 528-4906.

### SX-64 SHORTAGE

We're beginning to wonder if Commodore wasn't just a bit premature when they discontinued the SX-64 transportable version of the Commodore 64 a couple of years back. Despite some reliability problems, difficulty in servicing, and a tiny color screen that can only with great charity be called "marginal", the SX-64 has proven extremely popular as a transportable second computer for the dedicated Commodore crowd. We see **WANTED: SX-64** ads in almost every user group newsletter we read, get dozens of reader mail letters every month asking where SX-64s are still available (the answer, I'm afraid, is: nowhere), and even hear from many of the professional writers and programmers that we deal with on a regular basis that they'd "sure like to get ahold of an SX-64". With the last of even the refurbished SX-64s long gone, the market for used units looks strong for a long time to come. (Maybe Commodore could take a hint from all this activity and come up with a transportable Amiga...)





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## MICROPROSE, AKA ?

MicroPro and MicroProse have settled their dispute over corporate names. Under the terms of the agreement, MicroProse will have a period of four years in which to fully implement a name change. MicroPro, on the other hand, is prohibited from using the term "prose" in their promotions for at least 10 years. MicroPro, the originators of the industry-standard Wordstar wordprocessor, had filed a suit last year charging MicroProse with trademark infringement. MicroProse, the publishers of Gunship, F-15 Strike Eagle, and other simulation/entertainment titles, has not yet decided on a new name. MicroProse President "Wild Bill" Stealey says, "We really don't have a favorite at this time". New titles introduced later next year will have to bear the new name, though older titles can sport the MicroProse label until 1991.

## FCC CRACKDOWN

The Federal Communications Commission hit the COMDEX show in Atlanta in what appeared to be just short of a full-fledged raid. FCC field inspectors stopped short of confiscating equipment, but issued citations to vendors who exhibited out-of-spec equipment. Of 100 booths checked by the FCC, as many as 60 were cited with some violation.

## SUPERCONDUCTOR UPDATE

The June 29 BusinessWeek reports that as many as five labs have already broken the room temperature barrier with new superconductive materials. A college in Michigan hit 45 degrees Fahrenheit with a ceramic oxide compound containing fluorine; in India they've achieved partial superconductivity in a compound at 79 degrees; and in an experiment witnessed by visiting Japanese scientists, the Soviets have claimed 95 degrees F. In the wake of recent advances, IBM is said to be reopening its Superconductivity Research Center, which was closed a couple of years ago due to the "impracticality" of low-temperature superconductivity. Industry specialists believe that the research IBM has already done on Josephson junction devices puts them 10 years ahead in the game, and speculate that IBM may be only five years away from a practical supercomputer based on room-temperature superconductors.



## ATARI SEEKING DEALERS

Atari is backing off from the mass merchandisers that have provided most of its sales in the past, and is seeking dealers and value-added-resellers (VARs) to distribute their products in the future. Citing the typically low profit margins on Atari equipment, most resellers doubt Atari's ability to attract a significant dealer base.

## APPLE CANCELS NEW IIC MODEL

Apple's new Iic model (code-named Bert), which was scheduled for a Christmas release, has been cancelled. The Iic has been suffering from declining sales in recent months, and most people in Apple circles were hoping that a new model with advanced features would help to bolster the Apple II market. The cancellation of the project, in the wake of the recent flurry of activity surrounding the introduction of new Mac products, is seen by most as an affirmation of the widespread belief that the Macintosh faction at Apple is winning out over the Apple II faction in the continuing internal struggle for corporate commitment and resources.

## THINGS WE'D LIKE TO SEE

- > A laptop portable Amiga, based on the A500, with LCD screen.
- > An inexpensive generic flat-screen LCD "monitor" that could be used with any computer via standard RGB or composite inputs. Such devices exist, but current models are in the \$900-\$1700 range.
- > Serial port and mouse drivers for the Bridge card in the A2000. If Commodore isn't working on them, let's see them, and soon from PD or commercial software developers.
- > An easy, inexpensive A500-to-A1000/A2000 buss adapter, so the A500 could use all this nifty expansion hardware.
- > More software that takes advantage of the Amiga's built-in Clipboard Device, which allows cutting and pasting between applications (for example, from a spreadsheet to a wordprocessor).
- > More machine-specific computer shows rather than the big industry-wide behemoths of the past.
- > Less copy-protection, lower software prices, more great games, lower taxes, peace on earth, and a workable faster-than-light spaceship drive.







## The Real World

If you are much of a dedicated computerist at all, the odds are good that you have begun to lose contact with reality. As we all know, the computer is actually a window into a different (and much more interesting!) universe, and the glow of the computer's little screen is so compelling that many innocent computerists have already been lost to the Real World.

As a public service, we at INFO have decided to supply a lifeline to those who are so deeply involved in The World Inside the Screen that they have lost touch with everything else. INFO's "Real World" column will contain important news and items of interest relating to Life Outside the Computer. If you haven't had much contact lately with anything that didn't load in from disk, don't worry...we'll gently re-introduce you to what's going on Outside. Welcome to Reality!

### NEUROMANCER

If you have not yet discovered the new wave of "Cyberpunk" science fiction, get on your bike and coast on down to the local bookstore and pick up a copy of William Gibson's *Neuromancer*. This book is already the cornerstone of a growing body of SF that combines punk culture and computers in a weird synergy that is both compelling and scary. There are many new and exciting concepts in *Neuromancer* and other Cyberpunk titles, including the idea of plugging directly into the worldwide telecomputing "matrix" via a jack on the back of your head, rogue artificial intelligences, and "black ice" (which is deadly copy protection). Some terms from the novel, such as "ice", are already working their way into the vocabularies of computer users. If you ever get the desire to read something without scan lines running through it, read *Neuromancer*. If you insist on scan lines, we understand that both a videogame and a movie based on the book are on the way.

### ROCKY FANS

There are, of course, two things in life that make life worth living. The first is computers. The second is Rocky & Bullwinkle reruns. In

East-Central Iowa, we have to disconnect the cable and hook up rabbit ears and make someone hold them just right in order to pull in the Rocky & Bullwinkle Show, but it's worth it.

For some time we've heard rumors that Jay Ward (the artist/creator of R&B) ran a shop that sold Rocky & Bullwinkle, Dudley Do-Right, and other Ward cartoon memorabilia, and we are now happy to confirm that the rumors are true! The shop is called The Dudley Do-Right Emporium, and it's located at 8200 Sunset Blvd. in Hollywood CA (90046). For a free list of keen Rocky stuff including T-shirts, buttons, scripts, and animation cels, call them at 213-656-6550.

### STAR TREK V

We hear rumors that the next Star Trek movie will kill off Kirk and Spock (this time for good!) and repopulate the Enterprise with a new crew, presumably to take the series on new missions into the twenty-first century.

### MAX HEADROOM

In a rare move, ABC (yes, the owners of COMPUTE! magazine--they also own a television network) has not only experimented with a new kind of television in producing a show based on *Max Headroom*, they've apparently even renewed the series for the Fall season! We thought that the episodes they showed this summer were a real artistic triumph, with excellent acting, sets, stories, and cinematography, and some really nice computer graphics, too. The whole thing has the flavor of *Blade Runner*, but with more humor. We hope that the series will retain the high quality it has established in the first few episodes.

### HOT BEEF

If you've been attending the Consumer Electronics Show in Chicago every Summer and have been stuck with paying five bucks for a rubber hot dog at the unfriendly, crowded, monopolistic on-site concessions, here's a tip for next time: Walk two blocks west of McCormick Place to First National Bank of Chicago and grab one of their fantastic \$2.50 Italian beef sandwiches and a cold beer. Not only will you get twice the food for half the money, you'll get a little fresh air and a welcome relief from the crowd noise of CES. It'll give you the chance to meet some friendly Chicagoans behind the counter, too. It's well worth the short walk--your taste buds and your pocketbook will thank you for it.







Here's what you've been missing in the other magazines the past couple of months:

## The Transactor

The Transactor is to Commodore programming and hardware information as INFO is to Commodore news and product reviews--the undeniable authority. All of the Transactor's program listings are printed in informative BASIC or assembly language. The Transactor staff has been busy moving into new offices, which delayed production of the September/October issue by almost a month, but that issue is finally shipping as I write this. (I don't have my copy yet so I can't tell you what's in it!) The Transactor is still available by subscription mostly, though they are shipping directly to some stores. If you are interested in a subscription (or if you're a dealer and want to carry the Transactor) they have a new phone number: 416-764-5273.

## commodore

Commodore Magazine's type-in programs and games may occasionally be less flashy than those printed in the other magazines, but they are easier to learn from since they are printed in easy-to-understand BASIC. Check them out. The August issue contains the latest installments in several interesting ongoing series. There's the first in a series on MIDI programming, part five of Paul Higgenbotham's series on C programming, and part six of the AmigaBASIC tutorial. All include sample type-in programs. Graham Kinsey does a nice rundown of useful public domain programs for the Amiga. This issue also contains part four of a series on interfacing your own projects to the C64/C128 user port, with a build-it-yourself sound digitizer. (Hardware projects are a rare thing in computer magazines anymore!) There's also a feature on setting up a computer room on a budget. Now that Diane LeBold has left her post as editor of Commodore Magazine, they're shopping for a new editor. We hope that the new editor (whoever that will be) will be able to maintain the general level of quality that CM has displayed lately.

## Ahoy!

The July issue of Ahoy! begins with an editorial apologizing for the thinness of their summer issues. The excuse? Fewer ad pages during computing's "summer slump". C'mon guys: instead of apologizing for 100-page issues, just make sure those 100 pages count! Anyway, in July, Morton Kevelson takes a look at graphics conversion programs for the C64; Dale Rupert eases very gently into the topic of controlling real-world devices with your computer. There's a BASIC program or two in this issue, but the lead-off game is 4 1/2 pages of boring hex listing. We figure Vanna White fans have already levelled the Ahoy! offices for referring to her as a "dumb

blonde" in their August issue (because "she doesn't say much on the show", says Editor David Allikas), so we won't take them to task for it here. In this issue, Mort calls the FSD-2 Excelsior Plus disk drive "a competitively priced albeit plagiarized alternative to the 1541". It's just the sort of honest comment that separates Ahoy! from the big, impersonal mags.

## COMPUTE!

Laser Chess looked like a hot type-in program for the Amiga in the June COMPUTE!, but Tom typed it in and it didn't work. We're sure the CAPUTE! section a couple of issues down the line will fix the mistakes... If you've been interested in finding out a little about different programming languages, there's a brief look at the half-dozen most popular ones in this issue. Programs similar to the few type-in programs that appear for C64/C128 and Amiga in the June and July issues are easily found in the public domain.

## COMPUTE!'S GAZETTE

When I write the Magazine Index, I pile up all the magazines from the last couple of months and thumb through them as I write to make sure I don't miss anything important. When I do the COMPUTE! and COMPUTE!'s Gazette sections, I always have to ask myself: "Am I just jaded? Am I being fair? Is there really nothing of value in these magazines?" But when I open the August COMPUTE!'s Gazette and find the Sprite Magic type-in sprite editor reprinted entirely without changes from the August 1984 issue, I have to answer: "Even COMPUTE!'S Gazette knows how repetitive they are."

## RUN

I'm sure that Commodore's ad agency was thrilled with the cover of the June Run. After spending thousands of dollars to advertise the idea that the new Commodore PC-compatible computer is "not a clone--it's a Commodore!", the Run cover proclaimed in inch-high letters, "Look What's New From Commodore...A PC CLONE!" There is an interesting article in that issue relating how speech recognition on a Commodore 64 is beginning to help a physically disabled writer. Run got rid of their old "computer keys" logo starting with the July issue, following the trend of most magazines to go with a "clean" look. Our favorite part of the "new look" is barred printout-style program listings. The barred-paper look makes it really easy to keep your place when typing in programs. Since that's essentially why barred computer paper was invented in the first place, it amazes us that no one's thought of it before.

## MONEY MACHINE

I've got to admit, each issue of Money Machine Magazine looks better than the last. Don Vandeventer's third issue (the red one) is 48 pages of wall-to-wall honest reviews. He's



started taking ads, and the typeface is easier to read. This issue reports on one user's problems with GEOS and Berkeley Softworks, and includes Berkeley's response. The reviews express reservations about some products and enthusiasm for others. There's a good balance. It's still pretty expensive (it costs as much as INFO!), but it deserves a look if you are into productivity on your Commodore machines. Since it's still hard to find Money Machine, here's their address: PO Box 2618, Ocala FL 32678 (904-622-1022). \$16/6 bimonthly issues.



Almost the entirety of the July/August AmigaWorld was devoted to sound and music. It featured a tutorial on using sound from C, and several articles by Peggy Herrington, including a nice personality piece on B.B. King (an Amiga user!). Many of the main features were, however, just glossy non-critical 'reviews' of sound and music products.

The first AmigaWorld Special Issue was a disappointment to many users, who had been expecting something as good as Run's annual special issues. In the first place, it had been pre-sold to users with the line of "buy early--it's a limited edition". In the meantime, advertisers were being told "thousands extra will be printed--with a long shelf life". Users who bought early by mail faced a long wait for their issues to arrive while stacks of them were already on display at local bookstores. The "free" pull-out reference guide's undersized 16 pages were included in the page count of the 104-page issue, which doesn't make it "free" in our book. The pull-out guide was also printed in small, light type on fuzzy brown paper, which made much of it very difficult to read. The Amiga-drawn full-color cover illustration of the Amiga's innards by Jim Sachs was excellent, however, and makes us wish they'd always do the cover with the Amiga. With the power of this machine...why not? (We do.)

## Amazing Computing™

V2/#6 of Amazing features a roundup of seven different assemblers for the Amiga; there's a look at Logistix, Superbase Personal, and Organize!; John Foust waxes nostalgic on the Amiga Los Gatos facility as former employees hold a "wake"; and there's an in-depth look at what to look for in expansion peripherals. Volume 2, Number 7 zooms in on the topic of Amazing Video, with a look at animation, digitization, and other video applications for the Amiga, plus a review of CSA's Turbo Amiga. There's also an excellent technical article that

explains why the Amiga 1000's composite video is less-than-standard, and explains a simple one-resistor hardware fix! This project looks like a must-do for serious A1000 video users.

## OTHER AMIGA MAGAZINES

The May issue is the latest we've seen of Robo City News. Our guess is that they've cut back for the summer. Content of the May issue is a bit weak, consisting mostly of reviews with little that could be construed as hot news. We expect to see them bounce back in the fall.

Ami Project's April/May issue discussed how to use color palettes in AmigaBASIC, animation in C, and reviewed Absoft's F77 Fortran compiler. There was also an article on using Intuition menus from Modula-2--lots of good programmer's info, as usual.

## FAMILY COMPUTING

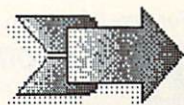
The "Buyer's Guide to Computer Systems" in the June Family Computing is somewhat less than exciting, but you might get some ideas from their article on the "Top 10 Computer-Based Home Businesses". Family Computing's type-in program space is divided among several top brands of home computers, but that means the listings are short, in BASIC, and easy to type in.

## COMPUTER SHOPPER®

The May Shopper has their report on the A2000 and A500, as well as an embarrassingly-timed interview with Nigel Shepherd. If you own a computer and you don't know who Ted Nelson is, you need to find out: there's an interview with him in the May issue. The June issue was up to over 525 pages and it takes two men and a boy to lift it. They're squeezing in about a half-dozen C64/C128 and another half-dozen Amiga reviews each issue, plus Cheryl Peterson's column on C128 CP/M.

## BYTE

The June issue of BYTE digs deeply into the new IBM Personal System/2. There's also a look at IBM's as-yet-nonexistent new OS/2 operating system. On the Amiga front, Warren Block reviews the Turbo Amiga chassis. This issue also marks the last of Bruce Webster's "According to Webster" columns, which focused mainly on the 68000 family of





# THE WORLD OF COMMODORE



The 1986 Canadian World Of Commodore show was the largest and best attended show in Commodore International's history. With 350 booths and attendance of over 38,000 users it was larger than any other Commodore show in the World — and this year's show will be even larger.

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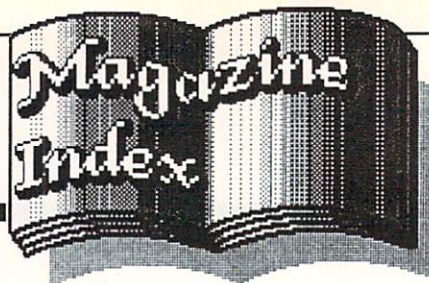
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...continued

computing machines. He's gone on to making the big bucks writing software manuals. The July BYTE compares benchmarks on the 68020 and the 80386. There are reviews of the new IBM PS/2 models 30 and 50, and a look at local area networks.

## MISCELLANEOUS

CW Communications, the parent company of Run and AmigaWorld, has launched some new mags aimed at vertical markets lately. CD-ROM covers that new technology (which really doesn't even exist yet). The first issue was March/April. Has anyone seen a second? Computers in Science is their latest effort. It features some nice graphics, but, again, we wonder if there's a market for it.

GEO WORLD is a new title devoted exclusively to GEOS. It's a very nice publication, and a must-have for GEOS power users. \$10/6 issues from: GEOWORLD, 38 Santa Ynez St., Santa Barbara CA 93103.

If you're into desktop publishing, which is, of course, the hottest area in personal computing right now, check out Personal Publishing and Publish! magazines. Perhaps it's because the desktop publishing industry is so new even in comparison with the computer industry, but both of these magazines has a bold, brassy style that is entertaining and informative at the same time.

It's tough keeping tabs on what's happening in computer technology lately. High Technology magazine often reports on developments in computers, graphics, and related technology. We've been keeping up on the latest in superconductivity in BusinessWeek, of all places. It seems there are billions to be made once the technology of room-temperature superconductivity is perfected. The little weekly newsletter Science News is another good source of late-breaking technological information; most libraries subscribe.

If you like your computer info via video, check out Computer Chronicles weekly on your local PBS station. Hosts Gary Kildall (the president of Digital Research and the developer of CP/M) and friends present the latest in computer news on a weekly basis. Though the major thrust is MS/DOS, they've been known to report on the Amiga on occasion, and it's always entertaining. It's aired at 10:00pm Thursdays here in Iowa City, but it's bound to be different in your hometown. Check your listings.

For quick help with your computer, check out the Commodore Information Network on QuantumLink. The message boards can provide you with expert help on almost anything, and the Byte Bar conference area is open all night for computer talk, questions, and answers.

That's it for this time!



**INFO**



# New Products

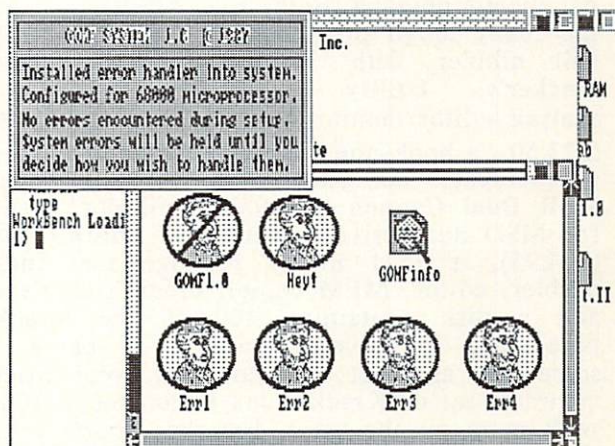
*Be sure to check out the CES/Chicago and COMDEX/Atlanta reports in this issue for even more new product information!*

## SHAREWARE

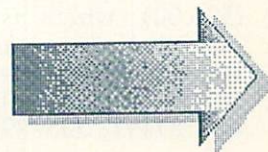
Many of the programs we used to see in the public domain now carry copyright notices and shareware license agreements. The concern of the authors of these programs seems to be caused by the callous selfishness of those who would turn a profit selling the works of others. The question the authors are asking is: How can I make sure nobody's going to latch onto my work and make a profit without my permission? Retention of copyright is imperative to this cause, and we would urge all who release software for public consumption not to put that software into the public domain (which means it is not copyrighted by anyone), but to declare the work copyrighted but freely distributable. You can, of course, also safely tack on a shareware statement. This allows the public, not the profiteers, to benefit from your labors.

Chris Johnson has come up with a welcome utility for Amiga users. His **GOMF** (which stands for "Get Outta My Face") program loads into the background and keeps track of system errors for you. If your system slips into a guru meditation, GOMF intercepts the process, giving you a chance to recover, debug, or reset (effectively getting the guru "out of your face"). An object module is available that can be linked to your own code for debugging sessions. We haven't had a chance to run this one completely through its paces, but it is small, it installs with just a double-click on an icon, and if it saves us from even one guru meditation it will be worth it. The suggested contribution for the runtime module or the linkable object module is \$5 each. The author is not making the program available directly, but it is available for downloading from PeopleLink, CompuServe, and Usenet. It has also been sent to Fred Fish and AMICUS for inclusion in their collections.

If you are in need of an excellent track and sector editor for 1571 format disks, you need look no further than John Navitsky's Sector Edit C128. It's got nice displays in 80 columns, is easy to use, and has more features than you can shake the proverbial stick at. Copies (including media) are \$10 directly from the author, and a \$5 donation is requested from those who obtain it elsewhere. Updates are \$3 to registered owners, and you can get on his mailing list to be notified of updates for an additional buck. Available from: John Navitsky II, PO Box 924, Sitka AK 907-747-3365.



*GOMF for the Amiga.*





## RABBIT JACK

Rabbit Jack's Casino has opened up on QuantumLink, with poker, blackjack, slots, bingo, and all the gambling ambiance offered by a real live casino. The atmosphere of a casino is maintained by the inclusion of a chat mode for the online games, so you can talk to other players as the game goes on. To access the games, you need an additional \$14.95 disk, available online through the QLink shopping area, or from retail racks in your area.

But where the heck is Habitat?!??

## KRACKER JAX

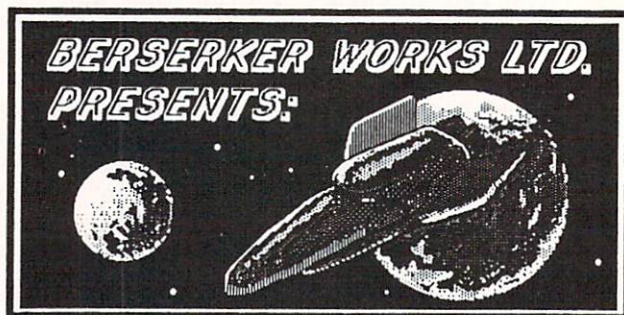
If you haven't discovered Kracker Jax yet, be advised that we are hearing from many users that they are extremely happy with the Kracker Jax line of disk archival products for Commodore's 8-bit machines. The series now includes 5 disks full of Kracker Jax parameters (\$19.95/ea.) with dozens of parameters on each; Bull's Eye (\$19.95), a cracker for the really tough programs, The Shotgun (\$19.95), a full nibbler with 32 parameters included; The Hacker's Utility Kit (\$19.95), a disk analysis/editor/monitor toolkit; Kracker Jax Revealed (\$23.50), a book-and-disk set that explains how 20 of the Kracker Jax parameters were developed; The MSD Dual Cannon (\$34.95), a nibbler/copier/editor for MSD dual drive owners; and The C128 Cannon (\$34.95), a 1571 utility package that includes a nibbler, editor, MFM copier, other hacker's utilities, and a disk containing 100 of the Kracker Jax parameters. I have to admit to being initially somewhat agog at the potential total price of a complete set of Kracker Jax parameters (\$100 so far, with more on the way), but the reports we get say the programs are excellent and support is great. I am very impressed with the schedule they've kept up in getting new parameters to market. We'll be taking close look at these titles soon. Computer Mart, Dept. I, 2700 NE Andresen Rd., Vancouver WA 98661, 206-695-1393.

## SIGN OF THE WOLF

This is an illustrated short-story-on-a-disk; an original Fred Saberhagen Berserker science fiction story, to be exact. Besides the text, there are 32 hires color illustrations. It's not a game or an adventure--it's an electronically published story. You just sit back and read and enjoy the illustrations. This is an interesting concept, and while the price is rather high for a single short story (\$14.00), it is certainly reasonable as software prices go. They call it "a coffee table art book at a kitchen table price". Also available from the same company are Berserker Raid (\$26.00), which is a game, Starball (\$22.00), a 3D racketball game, and Pride and Prejudice (\$26.00), a Romance-Era adventure. All are for the C64, from: Berserker Works Ltd., PO Box 14268, Albuquerque NM 87191, 505-298-3237



Rabbit Jack's Casino on QuantumLink.



Saberhagen brings Berserker to the C64 screen.



## CP/M COMAL 2.1

If you've been looking for an easy-to-use structured language for program development under the C128's CP/M environment, then you're in luck: COMAL is now available for C128 CP/M. While it (naturally) lacks the graphics and sound commands of the native C64/C128 version of COMAL, CP/M COMAL 2.1 does support all the structured programming commands, file structures, and system capabilities of its more colorful and musical forebear. It comes in a nice slipcover binder, and costs \$69.95 (+\$5 shpg.--\$39.95 more if you want the stand-alone runtime module, or a demo disk is available for just \$5) from: COMAL Users' Group, 6041 Monona Dr., Madison WI 53716, 608-222-4432.

## FLEET SYSTEM 2+

Professional Software (51 Freemont St., Needham MA 02194, 617-444-5224). has introduced an upgrade of the Fleet System 2 for the Commodore 64. Fleet System 2+ offers additions like a 90,000 word spell checker, work wrap, popup menus, custom printer drivers, and an integrated thesaurus. No word on upgrade policy, but retail price is \$59.95.

## GRAPHICS STUDIO

Accolade has announced a new paint program for the Amiga (and the AppleIIgs) called Graphics Studio. The program features include: cut-and-paste, zoom, 8 1/2 x 11" virtual drawing area, color cycling, a palette of 512 (for compatibility with the maximum capacity of the IIGS?) colors, user-definable patterns, and a full complement of drawing tools (lines, circles, polygons, etc.) The program also offers some unique features like transparent or opaque fills, a pattern editor, and a 16x16 pattern capture function. The price is \$44.95 from Accolade, 20813 Stevens Creek Boulevard, Cupertino CA 95014, 408-446-5757.

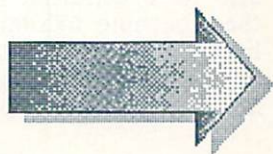
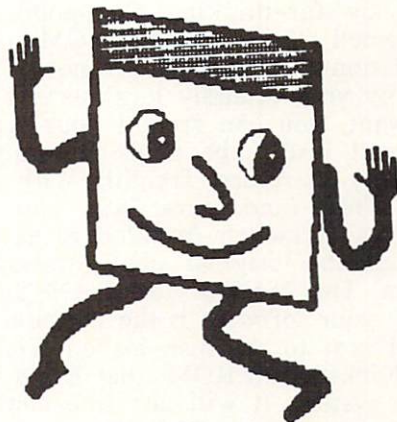
## JUMPDISK

Jumpdisk, the monthly Amiga magazine-on-a-disk, was a year old in July. Though disk magazines suffer from the inability to read them while you are in the john, they nonetheless have the advantage of including loadable, runnable software, eliminating the bothersome "type-in" part of type-in programs. You can also get the graphics animation and sound that the print media cannot deliver. Unlike some other disk magazines, Jumpdisk isn't full of readily available public domain programs. Every one is an original, and many are in listable, learnable BASIC. There are also editorials, articles, reviews, and other features. It's obvious the folks at Jumpdisk really care about what they're doing. You can check out a copy for \$8.50 from: Jumpdisk, 1493 Mt. View Ave., Chico CA 95926, 916-343-7658.



*Calvin the COMAL Turtle.*

## JUMPDISK



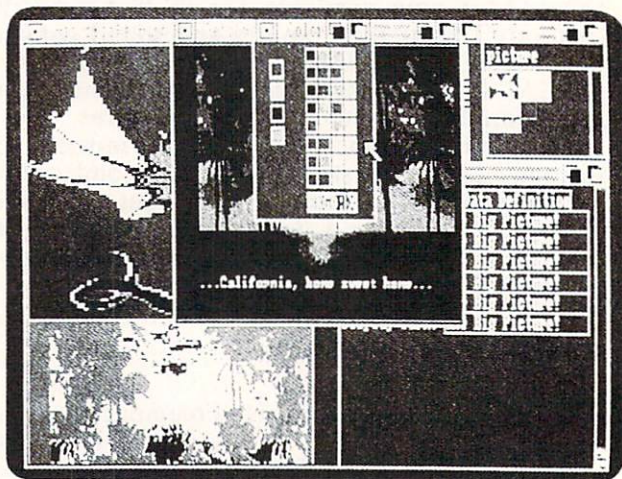


## MICROFICHE FILER

The floodgates have opened, and the Amiga productivity software is flowing forth. The latest database manager to cross our threshold is Microfiche Filer from Software Vision. This one displays both text and pictures, but unlike other DBMS with graphics capabilities, it lets you combine graphics and text on the same page--you are not limited to full-screen "slide-show" displays. Graphics can be any size, from brushes to larger than a full screen. Besides graphics, Microfiche Filer also features many powerful search, sort, and output features. One very nice feature is that it allows you to add or delete a field from the file structure without converting the whole database. It requires 512K and v1.2. From: Software Vision, 26 Forest Rd., Framingham MA 01701, 800-527-7014.

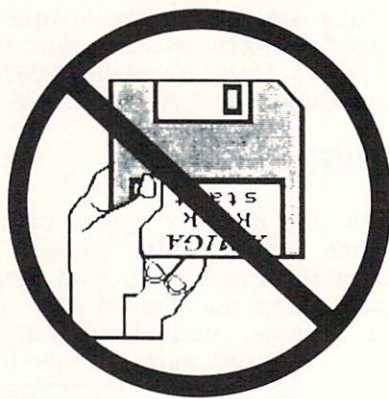
## KICKSTART ELIMINATOR

One of the major advantages of the new A500 and A2000 is that they provide Kickstart in ROM. Though this makes the system more difficult to upgrade (via exchanging ROMs rather than switching disks), it does provide a standard and makes booting up a relatively painless process. Well, now A1000 owners can add Kickstart in ROM to their machines, and get a bonus of freeing up an additional 256K of fast RAM at the same time. For \$129.95 (+\$5 shpg.) the Kickstart Eliminator kit provides you with release version 1.2 of Kickstart in 4 EPROMs, a new PAL chip, and a disk containing the PD program ADDMEM. CMI tells us that the Kickstart Eliminator is emphatically *not* a clumsy hack, but makes use of capabilities burned into the A1000 board by far-thinking Commodore designers, who anticipated the eventual ROMming of Kickstart. Installation of the parts is not trivial, and is best done by your friendly local service technician. Or if you want, you can freight your Amiga to CMI and they will install the chips for you for \$160 (chips included) + return freight. With some non-trivial extra effort (and extra \$\$\$), you can even have a RAM/ROM switch installed to allow you to switch between the original configuration and the ROM version. The 256K of fast RAM that is freed up for use by your software is the writable control store that played host to the disk-loaded Kickstart. Of course, with Kickstart in ROM, that RAM becomes available to the system. It will not auto-config because of its location, but the ADDMEM program provided will let the system know it's available for use, giving you a total system RAM of 768K, all completely internal to the A1000. CMI has licensed Kickstart from Commodore (this is *not* a pirate project!), and they also have acquired the rights to distribute updates as they become available. For those who are otherwise happy with their A1000s, this sounds like a great way to keep their machines current. From: CMI, 10110 SW Nimbus #B1, Portland OR 97223, 503-684-9300.



*Microfiche Filer for the Amiga.*

**CMI** Creative Microsystems  
Inc





## YAMAHA SPEAKER

If you've been looking for a hot self-amplified speaker for your computer room, check out the Yamaha KS10 keyboard speaker. This compact black beauty sports a 4-inch speaker and a built-in 6.5 watt amplifier, all in a box less than 6 inches square. The power switch, volume, and bass-boost controls are located conveniently on the front of the unit. The specs are great on this little puppy; it was designed to serve as a high-quality synthesizer keyboard monitor speaker. You'll need an adapter to use it with your computer as it only accepts a 1/4" phone plug input, but it sounds great! About \$100 at your local music shop.

## DIGA!

We received Aegis' Diga! terminal program for the Amiga a few weeks back, and, though it's got a lot of features, I have to admit I was disappointed in its omission of one very important feature. There is no split-screen mode. I like to chat in online conferences, and split-screen mode is an absolute necessity to prevent scrambling your outgoing messages into just so much hash. There are lots of other nice features, like scripts, an autodial phonebook, and easy menu selection of modem options, so if you never conference it's worth a look. If you do chat online, you'll want something else. Diga! is \$99.95 from: Aegis, 2210 Wilshire Blvd., Suite 277, Santa Monica CA 90403, 213-392-0735.

## ANIMATOR:APPRENTICE

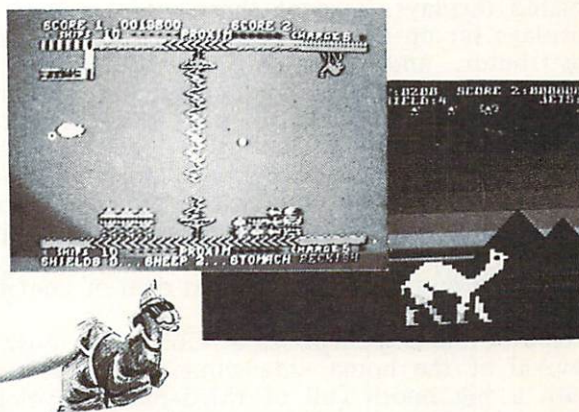
Animator:Apprentice is a new frame-animation program for the Amiga that is claimed to bring "Disney-style" animation to the Amiga. We haven't seen this product yet, but its author, Martin Hash, says it allows you to combine silhouettes into 3D characters, which can then be animated and edited. Individual frames are computer-generated, at a rate of 5-20 min./frame. A demo disk is available for \$10; the complete package is \$295, from: Hash Enterprises, 14201 SE 16th Circle, Vancouver WA 98684, 206-256-8567.

## YAK'S PROGRESS

If you yearn for the good ol' days of videogames, when a man was a man and a camel was a camel, then you'll love Yak's Progress, a collection of eight of the best early arcade games for the C64 by Jeff Minter. Included in the collection are *Revenge of the Mutant Camels*, *Sheep in Space*, *Metagalactic Llamas*, *Lazer Zone*, and others. Maybe it's just the nostalgia, or maybe it's the humor, or maybe it's just the refreshing feeling of being able to plug in a joystick and zap stuff without reading an 800-page manual first, but I've been having a real good time with these games...again! \$19.95 from: Eurosoft, 114 East Ave., Norwalk CT 06851, 203-838-9890.



*The Yamaha KS10 Keyboard Speaker.*





# CES summer report

## CES CHICAGO

The Consumer Electronics Show in Chicago is the granddaddy of all trade shows. Despite its name, the Consumer Electronics Show is not for consumers, but for those who sell to consumers. Multiple thousands of attendees, all dealers, distributors, or members of the press, attend this show every June.

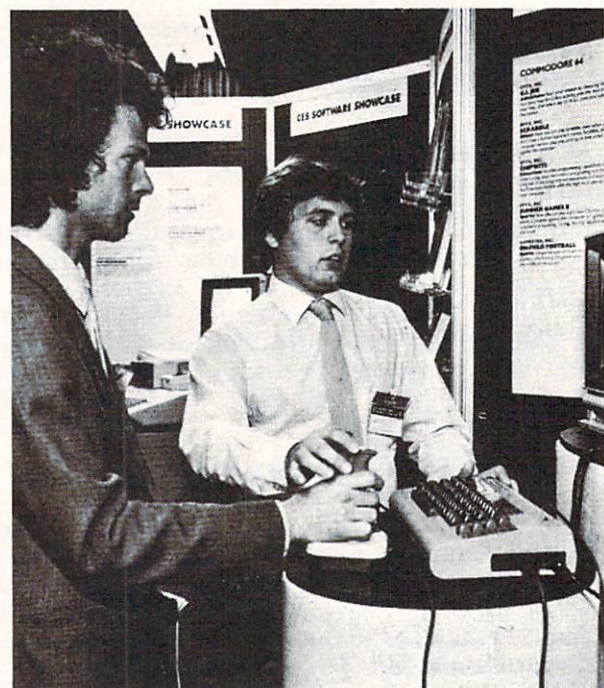
The McCormick Hotel (along with its associated exhibition buildings, McCormick Place, McCormick West, and the new McCormick North) plays host to the show, squeezing hordes of visitors from all over the world onto a few acres of steel and concrete stretched over the freeway in downtown Chicago, just a few hundred feet from Lake Michigan. Woe be to the hapless tourist who gets caught in the traffic on his way to Soldier Field or the Field Museum that weekend! Show attendees jam the Loop with traffic, fill the hotels to capacity, hog all the cabs and limos, and tax the resources of the restaurants of the Windy City for the duration of the four-day event.

## THE SHOW

Computers and computer software shared space in the brand new McCormick North exhibition hall with telephones, calculators, toy robots, and electronic novelties. (Our favorite: a mounted fish that wiggled its tail when you clapped your hands.) Computers were stuck in the back of the hall, hidden behind everything else. As we trekked down the long aisles, the first computer-related booth we ran into was Atari's, which had a real private airplane perched on top! Squeezing around the activity there, we found ourselves looking at perhaps three dozen computer-related displays. Two of those were multiple-vendor displays set up by Soft-Kat, the educational software distributor, and CSS, one of the largest software distributors. Many of the companies that had had their own displays in the past were relegated to a small shared space in one of these distributors' booths. Though the computer displays weren't as impressive as those in the heyday of the computer boom, the showing this year was quite respectable. Best of all, those who were at the show were all survivors, and expressed a great deal of confidence in the future of the industry.

One of the big surprises at CES was a push for the revival of the home videogame. Nintendo was there with a big booth full of third-party developers for their Nintendo Games System, Sega had a booth with some impressive new titles, and Atari was pushing their older games machines and even introduced a new game machine based on the XE computer.

The games market in general seemed to be really hot. There were a lot of new games at CES, and there was a lot of talk about the "games revival".





## ACCOLADE

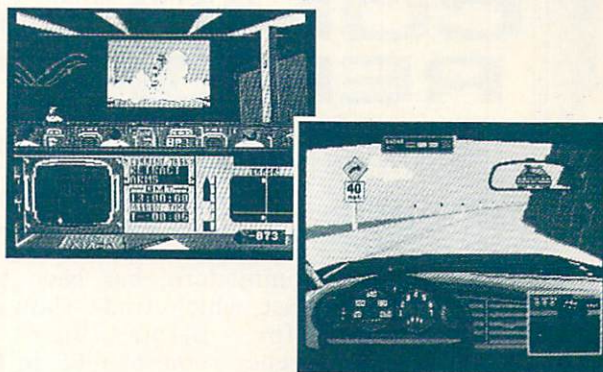
Accolade was in the Soft-Kat booth, showing a great-looking new driving simulation on the Amiga called *Test Drive* (\$44.95). This program, which will also be available for the C64 (\$29.95), puts you behind the wheel of a Lotus, Lamborghini, Ferrari, or other great world-class sportscar. The game features a full dashboard display, complete control of acceleration, braking, and shifting, and even has a rear-view mirror...that shows a cop car if you get caught speeding! Also announced at the show was *Apollo 18*, a simulation of the Apollo moon mission for the C64 (\$29.95), and *Sigma 7*, a new title in Accolade's budget-priced (\$14.95) line for the C64.

## ACTIVISION

In their conference room downstairs at McCormick North, Activision was displaying three new titles for the C64 and a work-in-progress for the Amiga. The *Last Ninja* for the C64 is based on a Japanese legend; you become a Ninja assassin, attempting the rescue of some sacred scrolls from an evil shogun. The game features great sound, nice scrolling and character animation, and classic hand-to-hand combat action. It looked good. *Maniac Mansion* is the latest for the C64 from LucasFilm Games. This cartoon adventure has you searching for your kidnapped friend through 55 rooms filled with 450 objects that all have some use and purpose. It's reminiscent of *Deja Vu*, but all the objects stay on the main screen, and the characters move around in 3D. *Top Fuel Eliminator* is the latest from Gamestar. This drag racing simulation for the C64 is very complete, with just about every detail from the real thing in there somewhere; but I'm not convinced that the few seconds a drag racer spends screaming down a simulated quarter mile makes a good videogame. We'll see when we have a chance to play with it some. In two announcements made at CES, Activision says it is joining the ranks of software companies that are dropping copy protection (at least on some titles) by eliminating the protection from its Personal Choice series of productivity software. They also announced that they are moving several best-selling older titles to their lower-priced "Solid Gold Software" line. Now at the lower \$14.95 price are: *Hacker*, *Ghostbusters*, *Little Computer People*, and *The Great American Cross-Country Road Race* for the C64. The Amiga version of *Little Computer People* will be repriced to \$24.95.

## ATARI

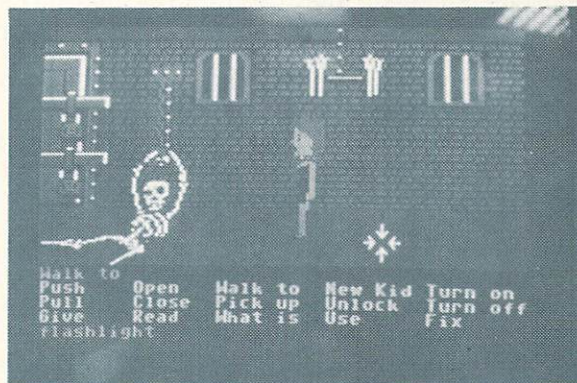
Despite the imposing subLogic plane parked on the upper floor of the two-story Atari booth, nothing of much interest to computer buffs was happening there. There was the standard "robot playing lots of MIDI instruments thru an ST" music display in one corner (with no admission on Atari's part that the ST's own built-in sound is somewhat less than



*Apollo 18 and Test Drive from Accolade.*

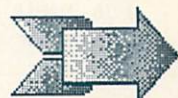


*The Last Ninja for the C64 from Activision.*



*Lucasfilms' Maniac Mansion for the C64.*

*continued on page 73...*





# COMDEX REPORT



## COMMODORE

Nobody, not even Commodore, has been sure the past couple of years just which trade shows they'd actually show up for. Before their display materialized in a conference room at CES in Chicago last summer, the grapevine had them in and out of the show a half dozen times. This year the situation stabilized a little earlier--three weeks before the weekend of both shows, Commodore announced they would *not* be appearing at CES as originally planned, but *would* exhibit the Amiga at COMDEX.

It seemed that almost everyone at COMDEX was interested in Commodore and the Amiga line. At a dealer meeting held at the show, Commodore had twice the attendance they anticipated, and they even had to set up extra tables for their press breakfast Tuesday morning.

At the press breakfast, the new members of Commodore management stressed the quality of the Amiga line, and the push they are going to give it in the marketplace. Commodore CEO Irving Gould started things rolling by saying "These machines have got to be marketed with direction, vision, and 'street smarts'. Our goal is to be recognized in America as we are in Europe and the rest of the world." He also announced that Commodore had secured \$60 million in private financing from the Prudential Insurance Company, a move that adds financial bite to the promise of better marketing.

Alfred Duncan, the new Commodore U.S. General Manager, called the A500 "the Ultimate Home Computer" and said the A2000 "gives new capabilities to the power user, especially in the booming areas of desktop presentation and desktop video". He also pointed out that he and Rich McIntyre, the new VP of Marketing, are both Commodore veterans with lots of computer industry experience. "We're not new to the industry; we're not new to the company. We can hit the ground running," he said.

McIntyre added that they had turned almost 400 potential dealers from skeptics into believers at their dealer meeting earlier in the week. He restated his goal of increasing Commodore's base of Amiga dealers in the U.S. from 900 to 1500. He also noted that interest in the Amigas among third party developers was so strong that Commodore had had to squeeze 47 Amigas into their booth rather than the 28 they'd originally planned for. They rewired everything just hours before the show started.

The press hit Frank Leonardi hard in the question and answer session, asking about product availability,

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*Sheldon Leemon of COMPUTE! and Benn caught doing a promo for Ziff-Davis!*



*Rich McIntyre  
Commodore's new Marketing VP.*



marketing plans, cooperation with the press, and other areas where Commodore has traditionally been weak. The answers were generally open and straightforward. Leonardi promised availability of the A2000 by the end of July, TV spots and print advertising for the A500 and A2000 in time for Christmas, and better cooperation with the press. The only verbal tap-dancing occurred when Rich McIntyre fielded a question about future availability of the A1000. He said "It still has a valuable place in the product line. Ergonomically it's night and day between the A1000 and the A500. The Genlock, Sidecar, and many third-party peripherals are available now for the A1000. We'll continue to build Amiga 1000s as long as there is a demand for them". When asked about future availability of the C128, Commodore expressed their intention to promote the machine through this Christmas, and again pledged to build them as long as they were selling.

It was our impression that the computer press remains favorably impressed with the Amiga line, but unimpressed with Commodore's marketing and support. Commodore will have to follow up the promises made at COMDEX with action if they are going to get the Amiga the media coverage it deserves.

## THE SHOW

Entering the East Hall of the Georgia World Congress Center, I spotted Commodore's large booth just behind the AT&T, Zenith, and NCR booths, not far from the entrance. It was nestled among Brother, Star Micronics, Amdek, and WordPerfect displays, an island of Amiga excitement and activity in a placid ocean of PC/clone complacency. Almost everyone with an Amiga product at the show was gathered under Commodore's wing, 30 vendors and 47 Amigas all in a few hundred square feet of space.

Commodore's own products were an island-in-an-island at the center of the booth. The A500 and A2000 were there, as well as add-on cards for the A2000. The brochures declared the A500 to be "Homeward Bound", while the A2000 offers "Professional Solutions". Here we got the first official word on the prices of the new units: the A500 will list for \$699, the A2000 for \$1995. Both are higher than we had hoped, but with discounts and even a possible trade-up deal on the A2000, they still should be highly competitive.

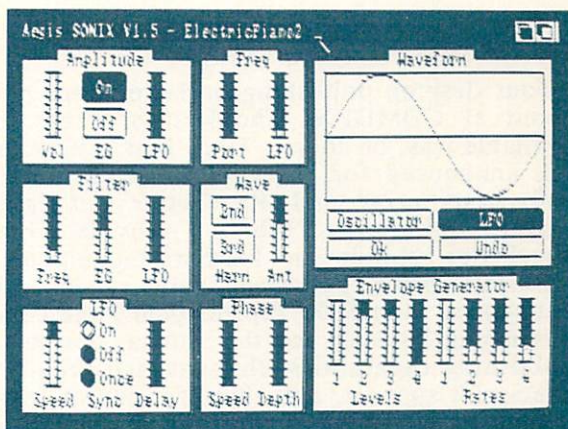
Most of the activity centered around the third-party products. Some were very preliminary, like new software from Aegis that adds digitized sound editing features to Sonix, or the sales training product that uses an Amiga, a Genlock, and specialized software and hardware to let sales trainees "meet" and react to real customers on videodisc. But other products were ready, or almost ready, to ship.

## GRAPHICS AND VIDEO

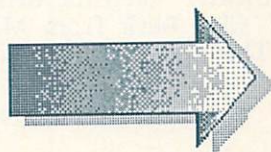
More than for any other personal computer,



*Alfred Duncan  
Commodore's new U.S. General Manager*



*Aegis Sonix.*





graphics development is *hot* for the Amiga. At the elementary end of things, Associated Computer Services was offering their **BrushWorks** series of fonts and clipart, featuring boxes and borders, presentation graphics, and desktop publishing art. Also from ACS is their **Station Manager** series, which provides text and graphics for TV and cable stations. The core of the series is **E/FX**, a "graphics animation engine", with 40 built-in screen wipes, remote-control variable-time sequencer, and other features. The **Weather Graphics** package adds maps and graphics symbols for weathermap displays, and the **Character Generator** provides access to 200 available fonts plus user-definable scroll areas, auto centering, and text importing.

Taurus was showing **X-CAD**, a new 2D CAD package that looks like it has everything. They claim speeds up to 10x faster than AutoCAD on a PC/AT, with features as esoteric (and useful) as user-definable cross-hatching and fonts and automatic alignment of parts. This looks to be a truly professional CAD package.

**Sculpt 3D** from Byte-by-Byte was designed by Eric Graham, who produced the **Juggler** public domain graphics demo for the Amiga. This solid-model raytracing program features an interactive 3D wireframe editor, user-definable lightsources, and 4096-color HAM mode detail.

NewTek's **DigiPaint** was creating quite a stir at the show, too, with its full control over all 4096 HAM colors. It integrates well with NewTek's **DigiView** digitizer and **Deluxe Paint** to provide colorization and detailing of digitized or IFF pictures.

For more on these Amiga graphics products and others, see "Graphics Renaissance" elsewhere in this issue.

## DESKTOP PUBLISHING

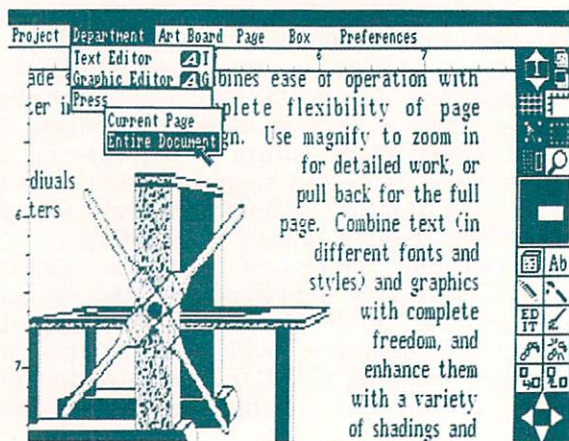
Four desktop publishing packages were being talked about at COMDEX. The first of these to become available was, of course, Gold Disk's **PageSetter**. Add-ons announced for **PageSetter** at CES are the under-\$50 **LaserScript** and **PageSetter Jet** laser printer driver programs, which provide high-quality **PageSetter** output on PostScript-equipped and HP Laserjet printers respectively. Gold Disk also announced their \$395 **Professional Page** color desktop publishing package for the Amiga. Besides full color publishing capabilities, this package provides integral PostScript support, auto-hyphenation of text, and can accept an optional module that will generate full-color separations using a laser printer or photo typesetter.

Brown-Wagh is now shipping **Publisher 1000** for the Amiga. They're shipping it without the promised PostScript support, but will ship free upgrades to all owners when the driver becomes available.

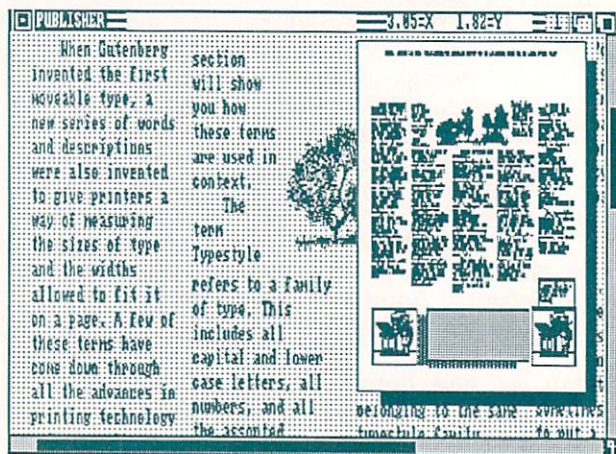
**City Desk** from MicroSearch was also at the show. This one will ship with a PostScript driver.

# COMDEX REPORT

...continued

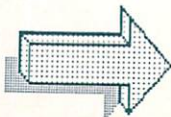


*PageSetter from Gold Disk.*



*Brown-Wagh's Publisher 1000.*

...continued on page 70





# PART ONE geos



# UPDATE

by Don Romero

## FIRST IMPRESSIONS

As the editor of a Commodore user group newsletter, I've been interested in the desktop publishing possibilities of GEOS from the beginning. My first experience with GEOS came when a friend brought over his copy of an early version (1.0, I think) saying that he was very disappointed and wanting to know what I thought of it.

Unfortunately, I had to agree. The most prominent features of geoWrite and geoPaint version 1.0 seemed to be their capacity to make the user wait (mostly on the disk drive), and my constant companion seemed to be dialog boxes informing me of software failures near such-and-such hex address. And besides, I have never been much of a joystick jockey and jumping from joystick to keyboard and back seemed like nothing but trouble.

Still, I saw some promise. GEOS, when it worked, did things that no other Commodore 64 program could. Heck, it had the 64 doing things few thought really possible, like using the notoriously slow 1541 disk drive as virtual memory - a trick that it very nearly pulled off.

By all reports, most of the kinks disappeared by the release of version 1.2, which the Software Publishers Association feted with their Best Technical Achievement Award. The promise seems to be panning out. And now there's a version 1.3 with even more features.

Of course, Commodore's announcement of the 1764 RAM expansion for the 64 put GEOS into a whole new light, too. In one fell swoop, the two biggest obstacles that I saw to GEOS ever becoming a serious and popular productivity tool - the 64K memory limitation and the slowness of the 1541 disk drive - were apparently solved.

But it is a relatively expensive solution. Consider that the cost of a C-64C, a 1541 disk drive, the 1764 RAM expander (with a list price of \$150) and a 1351 mouse is within spitting distance of 16-bit icon-and-menu-based systems like (my apologies) the Atari 520ST, and the Amiga 500. Add, too, that the typical GEOS application is \$40 to \$50 per. Is GEOS on an 8-bit computer worth that kind of investment? I was being asked a lot, but I couldn't really say. So when INFO gave me the opportunity to take a look and see for myself, I jumped.

Unfortunately, the promised 1764 didn't make its way from Commodore, via the also-curious INFO staff, in time to be examined for this first installment. I'll examine its capabilities next time. But even without it, I've seen enough to say that I'm basically impressed with the features, ease of use and utility of the current GEOS offerings. Naturally, though, I have my gripes.

## THE TASK

Aside from doing 'just a review', I had real tasks awaiting GEOS. I had a newsletter to get out, using Writer's Workshop, geoPaint and Text Grabber (to convert files from my wordprocessor of choice, Superscript.) GeoDex would have its hands full with the mailing labels. The Calendar would help keep things on track. And with everything now so well organized, I figured a couple of relaxing hands of Blackjack couldn't possibly hurt the, er, cards any.

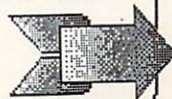
As an added bonus, INFO sent along a preliminary beta version of Berkeley Softworks' geoFile - a full featured (as they say) data file program - as well as geoCable, the geoFont/Pattern Editor package from Myth Concepts and two of the currently available GEOS book titles: GEOS Inside and Out, by M. Tornsdorf and R. Kerklof (Abacus, 1986) and How To Get The Most From GEOS, by Jim Oldfield, Jr. and Tim Sickbert (Midnite Press, 1986).

Unfortunately, I won't have the time (or for that matter the space) to give everything the eyeball they deserve this time around.

## BACK TO BASICS

I figured my system itself would be a challenge for GEOS: a C-64 and a four year old 1541 disk drive (never realigned!) both modified with the 1541 Flash!; a 1571 as a second drive; an old 32-column Amdek Color I monitor; and a battered Gemini 10x printer with a Xetec Supergraphics interface that throws fits over almost anything that messes with the serial bus timing routines.

Through it all, the Amdek stunk (the standard BSW font was too fuzzy to read - I am wondering how GEOS fares with small TV sets)







...continued

and the 1541 Flash! had to be switched off. But the mixed drives and Xetec worked fine with GEOS.

## COPYING DISKS

Being faced suddenly with a slew of GEOS application disks meant an evening spent copying disks. Every GEOS manual starts out stressing the need and explaining the technique for making backup and work disks. I compared both GEOS system copy programs, the original BACKUP and recent DISK COPY upgrade, to the public domain program 4MINUT and commercial FAST HACK'EM 2.0 in the single drive mode.

The old desktop 1.2 BACKUP copy program was the slowest of the lot. The newer DISK COPY program is a definite improvement in both speed and ease of use over BACKUP and using it is recommended. All three programs took three swaps, and copies from all the programs seemed adequate for backup and workdisk purposes. Be forewarned, however, that if you are planning to upgrade any workdisks to version 1.3 of GEOS, make sure they were created only with the legitimate GEOS copy routine. The 1.3 upgrade process recognizes 'cloned' disks and will without warning wipe out the boot sectors on such 'bogus' copies. Berkeley says this technique is used to discourage pirates, but many legitimate users have been surprised to find their work disks unbootable after upgrading to GEOS 1.3. If you do accidentally get stung by this 'Trojan Horse', don't panic. Only the boot sectors are gone. Your work files are still intact; you will just have to boot up first with a 'legitimate' copy of GEOS.

The GEOS boot disk is, I should note, copy protected - the disk, not the programs on it. The backup disk serves as a source for replacing the corrupted programs and drivers on the 'key' GEOS Boot disk. While I'm no fan of copy protection, the GEOS system is relatively benign (e.g. no headbanging) and provisions for restoring the boot disk in case of damage seem adequate. Granted, I have NOT tried pinning the boot disk to the refrigerator door with a magnet and restoring it to working order - yet. If you physically damage the original disk, you will have to get a backup from Berkeley before you can use GEOS again. The latest versions of the program come with a backup disk in the package--current owners can obtain a backup copy for \$5.00.

After making the suggested backups, the next task was to install the necessary drivers for the



THE NEWSLETTER OF THE



JUNE 1987  
Vol. 4 No. 10



### Elections, Auction To Be Held on May 19th

The last meeting of the season promises to be a full evening. Last month the auction of old software and hardware items were so well attended that many people began to bring their contributions that we will be having another one this month. All items brought will go to the new 800 software and 1000 app models. And then there is the election of club officers. Let me give you some names: Lee Bannan, becoming the next President; or Tim Cotton, becoming the next Vice President. And then there is the election of the next Treasurer, or the next Secretary. In any case, I'd like to see the opportunity here to come my friends to everyone who stepped forward when I really looked like the group was really going for the club and helped to make that year one of the best yet.

GEOS, B. P. W. R. R., Instant Photo, Crown, Betwood - p. 2  
Rattigan Resigns Under Pressure As Head of Commodore - p. 3

Mail Order Hopes Explored - p. 4  
128 ROM Changers Revealed - p. 5  
Climate 1.2 Reviewed - p. 7

### W.I.C.U. MEETINGS

**May 19 - General Meeting**  
The last General Meeting of the 1986-87 season will feature a demo of the new 800 software as previously announced. In its place will be a demo of 1000 and an evening of new software which is now available for the Commodore 64. Among the highlights (see page 4):  
• 1000 software (proposition)  
• 1000 software (proposition)  
• 1000 software (proposition)  
• 1000 software (proposition)  
• 1000 software (proposition)  
• 1000 software (proposition)  
• 1000 software (proposition)  
• 1000 software (proposition)

**May 26 - TAG (The Amiga Group)**  
If you missed the last Amiga meeting, you missed...  
• A demo of the new Amiga software.  
• A demo of the new Amiga software.  
• A demo of the new Amiga software.  
• A demo of the new Amiga software.  
• A demo of the new Amiga software.  
• A demo of the new Amiga software.  
• A demo of the new Amiga software.  
• A demo of the new Amiga software.

**May 27 - 128 SIG Meeting**  
Contact Carl Bannan or Lee Bannan for more details about the next meeting of the 128 SIG Commodore 128 SIG.  
The next General Meeting will be held on August 19th, 1987. There will be no meetings held in June or July. The Amiga Group will continue to meet during the summer. However, contact Carl Bannan or Lee Bannan for info about summer 128 SIG meetings.

**Journal Number 7**  
Even though the demo has been changed, the Journal topic will still be on the Commodore 128. It is understood that we have the new software for 128 now, but Steve is not going to round the month (early 1987) to demo it. I also received word of some comments about the wordwrap routine in the new program. Hopefully, it'll be able to come back into the program and do in moderation. As for changing the printer routine to support Epson or other printers, it doesn't look like it's going to get done this time around. All the last meeting, one of the things I said that I'd try to get done this summer is to put off the old round robin on disk and add them to the club 80 library. I'd also like to get a couple of issues ahead over the summer. The next issue or two will probably be on BASIC programming, BASIC INPUT, BASIC OUTPUT and useful BASIC ALGORITHMS. Other ideas for next year's issues include: SOFTWARE, SPREADSHEETS, and HARDWARE MODIFICATIONS. I'm open to suggestions.

## W.I.C.U. Word Wrap, cranked out with GEOS.

input device and printer of my choice. The input device I used throughout was the new Commodore 1351 proportional mouse.

## THE COMMODORE 1351 MOUSE

Zooming around DeskTop, geoPaint, and the entire bevy of GEOS programs with the 1351 Mouse was a kick. The 1351 in combination with the 1351 GEOS input driver offers a one-to-one response between the movement of the mouse and the movement of the pointer on the screen. If you are planning to get or already have GEOS, I highly recommend getting one. Right now, it's pricey (\$50) compared to a joystick, but as my Amiga has taught me, it's far more natural to use. Plus you have true 360-degree control, not just the 8 directions afforded by a joystick.

For those not interested in GEOS, the 1351 may be difficult to justify until some non-GEOS commercial software that supports it becomes available. Both the 1350 joystick-direction-only mouse and the 1351 in its optional "joystick mode" make lousy joysticks.

Berkeley is also promising their own "geoMouse" with a built-in clock (!) which



should be available soon for about the same price as the 1351.

## GEOPAINT

The starting point in putting the newsletter together was getting that front page banner and border all in one geoPaint file. No more cutting and pasting the logo!

Version 1.0 had washed out because of bugs and the lack of a Gemini 10x printer driver when I had tried to use it. Happily, the newest version of geoPaint addresses these problems. At no time did I manage to crash the current geoPaint. The new printer drivers - both the geoCable and serial port versions - worked flawlessly, especially the logic-seeking routines that no longer wasted time printing blank lines and trailing spaces.

One big irk (which the 1764 RAM expansion should eliminate) was waiting for geoPaint to get ready (by updating the file on disk) to scroll the editing window across the work page. And there were some baby irks like the limited circle routine. Also, in the text mode I found it hard to place the Text Region or the text with absolute pixel precision.

But probably the biggest irk of all was trying to coordinate graphics on two sections of the workpage which were farther apart than the width or the height of the editing window. GeoPaint definitely needs a pixel coordinate readout like that found in Deluxe Paint.

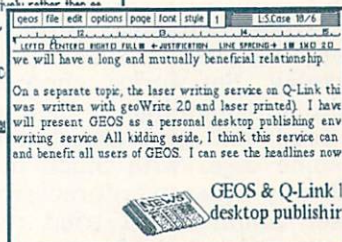
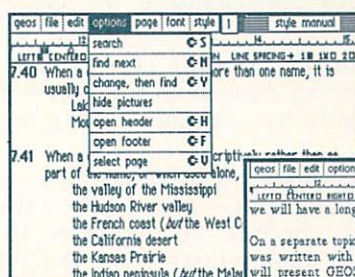
Overall, though, I found geoPaint with the mouse to be significantly more satisfying than attacking my previous favorite - Doodle! - with a joystick and a trackball. In other words, that front page came out pretty good!

## GEOS WORDPROCESSING

With the front page graphics out of the way, I started on the actual copy. I used geoWrite versions 1.3, 2.0 (the version that comes with Writer's Workshop) and my "wordprocessor of choice" via the Workshop's Text Grabber.

GeoWrite, in both versions, is a true What-You-See-Is-What-You-Get (WYSIWYG) wordprocessor. With due respect to Pocket Writer fans, it is the only WYSIWYG WP for the C-64 with true support of proportional and multiple fonts.

The downside to WYSIWYG wordprocessors in general is that the extra programming (and in GEOS' case, the graphic screen memory) eats away at available text space and more advanced features. GeoWrite is no exception. It displays only one page of text, and moving to the next



or previous page requires time-consuming disk updates. I found text easy to enter, but the going is tedious when doing rewrites and modifications like enhancing and adding fonts. (Once again, the 1764 would probably eliminate the disk delays.) One welcome feature would be a vertical rule or at least a line number indicator.

You've probably seen geoWrite 2.0 touted elsewhere as a full-featured word processor. Obviously, full-featured is in the eye of the beholder. Relative to an antique like Quick Brown Fox, or to earlier versions of geoWrite, version 2.0 is certainly *fuller* featured. But in a field that includes Paperclip, Wordpro GT, Word Writer, Fleet System, Pocket Writer and Superscript, geoWrite 2.0 comes off as moderately powered with the one unique feature of full WYSIWYG support for proportional fonts.

There are some new features: with geoWrite 2.0, you can now scroll the screen in all directions using the mouse or the cursor keys. You can set the margins, indentations and justification format (left, right or full) for individual paragraphs. And with version 2.0 you aren't doomed to 'centering' merged graphics as you are with the earlier version of geoWrite. The search and replace features are well supported, albeit slow with a disk drive and a long document. Support for super- and subscripts has been added.

Also in version 2.0, the print routine has been enhanced to support quick drafts (sans fonts and formatting), daisywheels and printers with NLQ modes, printing a specified range of pages, and both single sheet and continuous feed paper.

On the other hand, geoWrite 2.0 does not support: cap locks, case changing, column sorting, automatic column printing, shifting columns, math functions (does have decimal tabs), user-definable phrases or macros, automatic indexing or table of contents, footnotes (as opposed to page footers) or saving





...continued

text to disk in non-GEOS file formats. A spelling checker (at extra cost) is in the works as I write and may already be available as you read this.

Printing columns with geoWrite 2.0 is something of a sore spot, given the way Berkeley Softworks chooses to feature this desirable capability in their glossy ads. It CAN be done with geoWrite, but no more easily, and in some cases with much more difficulty, than with any other wordprocessor with a horizontal offset command. I tried twice, but could not get the "Cake" double column demo to line up evenly on the second and third passes.

The major problem I would have had, though, with reproducing the three-column layout that I usually use in our newsletter was the one inch border geoWrite forces on either side of the page. It's nice for resumes and okay for letters and memos, but it's just wasted white space for my purposes. In the end it was scissors and gluestick as usual.

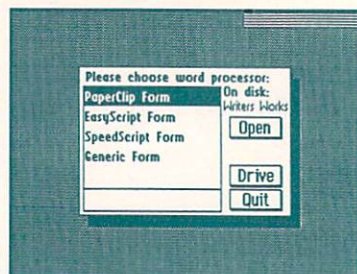
The final result was very nice, however. GEOS' proportional fonts, and especially the larger points for titles and headers, really enhanced the total look of the issue.

## TEXT GRABBER

I used Superscript to write one long article and tried importing the file with Text Grabber. Since Superscript is not directly supported by Text Grabber (Paperclip, Easy Script, WordWriter and Speedscript are) I tried the "Generic Form" first as recommended.

The result was disastrous - locking up version 2.0 when I tried to load it. What showed on the screen looked like a standard ASCII/PETASCII mismatch. And geoWrite 1.3 wouldn't touch it: apparently Text Grabber and version 2.0 files are not downward compatible.

Superscript files are essentially identical to Easy Script files except the system data is stored at the end, rather than the beginning of the file, so that was my next choice. Whenever Text Grabber doesn't understand a character within the chosen file structure, it kicks up an Unrecognized Character/Command dialog window asking if it's OK to replace the character with a '?' or to CANCEL. CANCEL means just that: forget the whole thing. So when the Superscript system data began coming up, I had to click the OK box - count them - in 153 different dialog windows! But I did get my file transferred, and I didn't try any of the other forms. If anyone is listening at Berkeley, a TRUNCATE feature would be a welcome addition to Text Grabber.



From all the gripes, it might appear that I'd be inclined to recommend avoiding Writer's Workshop like the plague! Far from it. The only other package for the C-64 that offers features comparable to it is The Newsroom (Springboard), which pales when you compare ease of use (excepting double-column printing) and the quality of printout.

I see Writer's Workshop as a interim step toward the true GEOS desktop publishing package due out later this summer.

## GEOCABLE

GeoCABLE is Berkeley Softworks answer for hooking up a non-Commodore printer to the Commodore 64. The package includes a six foot cable, a disk with several GeoCABLE drivers and some instructions. Plugging into the user port, GeoCABLE gives you a full parallel pathway to the printer, providing about a 25% speedup during a full page geoPaint printout versus my Xetec Supergraphics interface with its 8K buffer. Both cables returned control to the program about the same time, though. The full-page geoPaint dump to my Gemini 10x with the geoCable took 6 minutes 28 seconds. And since GeoCABLE is just a cable, it's very easy to use (as long as you have the proper printer driver on the right disk). GeoCable can also be used with programs which support a Centronics printer via the user port, which range from Easy Script to Vizawrite Classic.

Nevertheless, geoCable may be the most poorly considered product in the GEOS line so far. Construction-wise the Centronics connector IS metal, but the user port connector is plastic on plastic, and both are snap-togethers that are not easily disassembled for repair or troubleshooting. The cable itself is on the chunky side, and less than optimally flexible. It is also pricey (\$40). You can get a much better molded cable from a custom cable supply company for about half the suggested retail price of the geoCable. And relatively few non-GEOS programs support parallel output, so you will probably still need a standard serial port interface anyway, making geoCable somewhat redundant.

But even under GEOS, the use of the geoCable bumps heads with hooks that GEOS offers for



using a modem, such as the exit to QuantumLink option, and the autodialing feature of geoDex. With an innovative connector that would provide modem access at the flip of a switch, geoCable might be worth a \$39.95 pricetag. But without it, for too many reasons it makes sense to stick to a standard printer interface (preferably with a large buffer) or at least to buy a less expensive alternative elsewhere.

## GEODEX AND GEOMERGE

GeoDex is an electronic card index that is perfect for keeping track of addresses and phone numbers. It's not a full-featured database, but it will do searches on any field, including three three-character ID fields, which makes it easy to separate the "to whoms" from the "whomevers" when the necessity arises—for a form letter, Christmas cards, or party partners-in-crime.

One irk is that the person-based file format is not conducive to filing establishments (e.g. businesses, stores, schools, clubs, pizza places that deliver, etc.) into geoDex, too. Perhaps a solution will be found in time for Desk Pack III, eh?

GeoMerge is a utility for taking data from geoDex, a geoWrite document or the keyboard, and merging it into a personalized form letter. GeoMerge also supports unique conditional datafield statements which make the inclusion of specified parts of the form letter dependent on the data for that field being a certain value or range of values. GeoMerge should also work with data from Superbase, using the latter's 'fill' command for exporting data to Easyscript, capturing the Easyscript-format file with Text Grabber, and making trivial modifications with geoWrite 2.0. It would be nice to see a Data Grabber program (perhaps including a Superbase exec file) that would do all that automatically, though.

## GEOFILE

GeoFile is an interesting and potentially powerful file keeping system that has as much in common with geoPaint as it does geoDex, which is by function its little cousin. (Note that the geoFile program I received is a beta version and not a final release version of the program.)

The work area or "master form" in geoFile is a full 8.5 by 11 blank page upon which data fields can be laid out freeform pretty much anywhere the user likes. Or the Master form can be limited to a 3 by 5 filecard size; or it can be

## GEOFILE

Invoice	
Customer Name : Seagull Dev. Co.	Date : 09/28/86
P.O. Number : 6974	Invoice # : 8976-025
Address : 67 Ocean Blvd. Seal-lead, CA	
Cust. # : 190875-2	
Job Description : Building Restoration	
Remit total to:	Materials (\$): 10,762.40
Seal-lead Construction	Labor (\$): 47,248.88
Terms:	Tax (6.5%) (\$): 3,488.63
net 30 days.	Total (\$): 61,499.91

designed so that two or more complete files can be packed on a single page. In fact, for reasons noted later I wouldn't recommend that you use the entire page.

GeoFile supports text and numeric data fields, and each main form must have one key or sort field upon which the data forms are arranged alphabetically or numerically, as the case may be. GeoFile also supports non-data comment fields (containing instructions for example), and graphics (perhaps a business logo) can also be merged into the Master form.

Laying out a geoFile Master form is as easy as pointing and clicking, stretching out the ghost box to the size you want, and clicking again. Once positioned, the box can easily be resized, repositioned, deleted or recopied somewhere else. Field labels (limited to 16 characters) are entered or changed by clicking inside the field box and typing from the keyboard.

Even when data has been entered into the Master form, there is a wide latitude for adding, repositioning and deleting data fields. A grid of diamonds and an Align function are available to help keep the layout orderly; or, both can be switched off as the user prefers.

Besides the main data form, up to 15 sub-layouts can also be designed using (and reusing) data fields from the Master form. These sub layouts can be used in much the same way locked windows are used in a large spreadsheet. Data from different parts of the Master form can be brought together into one viewing screen.

The procedure for creating sub layouts is essentially the same as for the Master form. A nice feature, too, is that all the match, search, update and printout features work on the sub layouts just as they do on the Master form.

Moving around the Master form in geoFile is comparable to geoWrite 2.0, only much more responsive; the scroll box is bigger and can be moved around the screen or hidden with a menu selection.

Unfortunately, where geoFile is a breeze to set up, I consider it a disaster to enter data into. Since it is freeform by nature, there is no default or user-definable linkage for passing



systematically from field to field when entering data. Movement around the Master form during data entry is entirely up to the user. Both the pointer and cursor keys are supported, but while left and right cursor movements are intuitive, the up and down cursor movements take getting used to.

If the cursor is in a large field with two smaller fields below it, the cursor may be directly above the lower field to the left, but cursoring down will move the cursor to the field to the lower right, apparently because it is the next box under the right end side of the upper field box.

If you cursor to a field box off the current viewing screen, in scrolling the screen over to refind it you will only discover that the cursor has disappeared and must be re-established by clicking the desired box. If you miss a field, or many fields, because you didn't scroll around the entire Master form, that's your problem: geoFile flexibly doesn't care and no error messages will appear.

This is the reason I wouldn't recommend designing the Master form with the whole page in mind. Instead, design around the display window. It would seem to be easy enough to do, and is definitely recommended to implement some systematic data entry routine - perhaps a series of dialog boxes - before this package is released for sale.

GeoFile is exciting, though, because I don't believe there has ever been a database product for the Commodore 64 quite like it...perhaps because there has never been a GEOS. In the final version, the user's imagination (aside from available disk space, of course) may be the only limitation to its possible data control applications. Especially if Berkeley Softworks (hint!) is imaginative enough to also implement font support AND graphics data fields (similar to Infominder or Superbase for the Amiga) into geoFile, too.

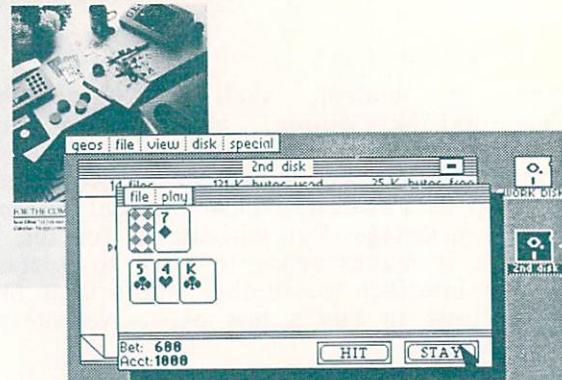
## BLACKJACK

After a hard day's work of booting and dumping and formatting and pushing a mouse around the table, a relaxing game of blackjack is in order. All the better if it provides all the pleasures of casino style play, without the nastiness of having to settle up your debts...

Blackjack, a GEOS game included on the DESK PACK I disk, modestly demonstrates that the 64's animation and sound capabilities aren't buried under GEOS' own requirements. The play is smooth and intuitive, though it would have been nice to be able to change the amount of the bets completely with the mouse. Keep in

## DESKPACK I™

FOUR NEW APPLICATIONS FOR USE WITH GEOS



mind that the dealer must draw to 16 and hold at 17. Let him go bust if he's showing a three to a six with a fresh deck. And count those face cards!

Personally, I'm hoping they include geoReversi with DESK PACK II (Hint! Hint!)

## NEXT TIME

Next time, I'll look at GEOS with the 1764 RAM expander; GEOS products from Abacus, Midnite Press, Myth Conceptions, Mystic Jim, and other third-party developers; hopefully take a look at early versions of geoCalc, geoPublish, and the new GEOS assembler; and do an overview of the GEOS support on Quantum-Link. Whew!

GEOS (with geoPaint & geoWrite)	\$49.95
DESKPACK I	\$34.95
GEODEX	\$39.95
WRITER'S WORKSHOP	\$49.95
GEOFILE	\$49.95
GEOPRINT CABLE	\$39.95

are all available from:

Berkeley Softworks  
2150 Shattuck Ave.  
Berkeley CA 94704  
415-644-0890

For the latest on GEOS see INFO's CES report elsewhere in this issue.



### ABOUT THE AUTHOR:

INFO Contributing Editor Don Romero is the editor of the Western Indiana Commodore Users Group newsletter, Word Wrap. He is also the devilishly clever mind behind the C.H.U.M.P. magazine parody in the last issue of INFO.





# MICROTROLL

by Robert W. Baker

<p>MICROTROLL \$180 + \$5 shpg.          Slide Mountain Systems          PO Box 6481          Colorado Springs, CO 80934          303-449-4783</p>	<p><b>INFO-rated</b></p> <p>★★★★</p>
<p>An excellent general purpose interface board for the C64/128 with analog and digital I/O, real time clock, EPROM burner, and more. Comes with supporting software and complete, detailed documentation. Easy to program and use with minimal electronics experience. Added support via free BBS forum and low cost Tool Box diskettes.</p>	
<p>-RB</p>	

Here's a very big idea from a small and relatively unknown company. The Microtroll, from Slide Mountain Systems, was designed as a general purpose interface board for the Commodore 64. The Microtroll allows designing and constructing custom microcomputer controllers, monitors, and data acquisition systems with very little additional work. It also gives students, hackers and hobbyists the capability to learn about these systems first-hand and experiment with what they can do.

Besides the unique hardware interface board, the Microtroll package also includes the necessary software to easily control and use the expanded hardware capabilities it adds to your basic microcomputer system. The hardware and software are both expandable, and you can custom tailor either to suit your individual needs. Everything is provided to get you started; just take it from there and use it for whatever you can think of. The Microtroll is definitely not a toy, however, and does require some knowledge for its safe and proper use. Inexperienced users will need supervision or the help of someone with an understanding of electronics.

## THE BOARD

No protective enclosure is provided for the high quality 9-inch-square main circuit board, so careful handling is called for. This board is connected by a short cable to another small interface board which in turn plugs into the C64's cartridge port. An AC wall transformer is also connected to the Microtroll logic board to provide the added power requirements of the board.

The main circuit board itself appears to be a

very high quality two-layer board. Everything is clearly labeled by the silk screening on the component side of the board, with functional groups of components blocked out, too. There are test points for troubleshooting and calibration, plus handy grounding and mounting holes. All external connections for the various interfaces are provided by two 34 pin edge connectors (with 0.1 inch centers) that are easy to locate.

## CAPABILITIES

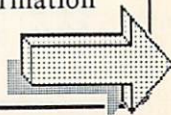
The Microtroll board provides a two channel digital to analog (DAC) output, with four output voltage ranges that have 1 or 10 volt limits with only 8 bits of resolution. It also provides a 16 channel analog to digital (ADC) input, with a range of 0 to +5 VDC and 8 bits of resolution. Additional circuits provide 16 bits of digital I/O, a real time clock with optional battery backup, plus a handy PROM burner and capacitor checker.

The range of the DAC interfaces and the output of the ADC channels are all programmable, as are the direction (in or out) and sense (on/off) for each of the individual digital I/O bits. The EPROM burner handles most 2764, 2732 or 2732A type EPROMs that use a 21 or 25 volt programming voltage. The capacitor checker circuit uses one of the ADC channels, but can be disabled by cutting a trace on the logic board.

You'll need to supply your own sensors or output devices for the Microtroll, depending on the particular application you have in mind. With the proper interfaces and some additional software, the Microtroll can easily be used to create home monitor or security systems, greenhouse controls, robotic systems, automated test equipment, laboratory monitor or data collection systems, teaching electronics, or whatever else you may have a need for.

## SOFTWARE

The standard software supplied with the Microtroll package consists of an Operating System of Basic and Machine Language routines that are stored in a ROM on the interface board. This software is almost 8K in size and auto-boots when the system is powered up or reset. It provides immediate commands for direct keyboard interaction with several Microtroll functions and is extremely easy to use. All functions prompt for additional information





### *MicroTroll continued...*

when required and are extremely easy to use.

The immediate functions provided by the standard Microtroll software allow setting all inputs and outputs within the ranges allowable for each circuit. You can also set the time and date in the internal clock, or access the PROM burner and capacitor checker circuits. There's also a scope function that provides a handy plot of any analog input channel for a selected time period. If you want to add your own functions to the ones already provided, there's even a simple way to call the extra functions once they've been added.

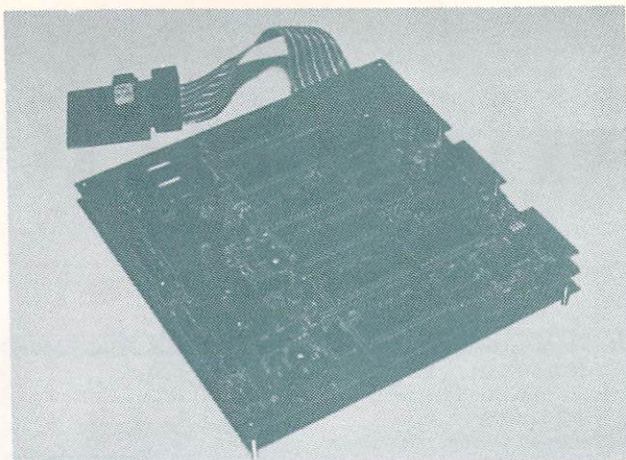
Besides the standard Microtroll Operating System software, printed listings are provided for various software routines and programs as examples for writing your own software routines. Your expanded software can be saved on disk and reloaded when desired, or easily stored in permanent PROM memory on the Microtroll board using the built in EPROM burner. When stored in the Microtroll User PROM, your software can be run automatically when the system is powered on or reset.

Your added routines might call on the standard routines already available in the Microtroll Operating System, or run all by themselves. You can add numerous clock alarm times, either singular or recurring, to control any operation or sequence of operations. You could also dump data to a printer or disk file, or transfer it by modem to a remote system. The possibilities are unlimited, and the required coding seems relatively easy and straight forward.

Some of the sample software routines included with the system were provided by Matt Sorrells, an avid Microtroll user and sysop of the Microtroll Forum on the Comstar Enterprise BBS. These handy programs increase the power and versatility of the Microtroll, while providing excellent examples of how you can write your own routines for special applications. The listings and associated comments for these programs are provided free to all Microtroll owners.

Additionally, Matt's programs are available on disk through Slide Mountain Systems for only \$5. The disk is called Matt's Microtroll Tool Box 1 and also includes a much, much faster machine language version of the PROM copy routine. This diskette is well worth the added \$5 cost and should not be overlooked. It should save you considerable time when you start to develop your own custom applications. As a learning tool it can't be beat.

By the way, Matt plans on releasing more programs in future additions to his Tool Box series. His next package promises to include a voice digitizer and playback system that uses the basic Microtroll hardware with only a few extra parts. Also, the Comstar Enterprise BBS that Matt is involved with is supported by the



*The MicroTroll from Slide Mountain Systems.*

factory as a forum for Microtroll questions, answers and technical discussions. This is a C64 based multi-megabyte BBS, running 300 and 1200 baud, with free public access to its Microtroll forum.

## **DOCUMENTATION**

The Microtroll documentation is excellent, almost 100 pages of detailed information covering every aspect of the system. It includes detailed explanations of the hardware and software operation. It also provides complete specifications, program listings, handy subroutines, quick reference charts, memory maps, connector pinouts, calibration and troubleshooting procedures, component data sheets, and suggested connections to the outside real world.

The level of detail in the documentation is exceptional and rarely seen in microcomputer products these days. On the other hand, this level of documentation is almost essential for successful use of the system, and your own abilities eventually become the limiting factor on what you can do with the Microtroll.

As the preface to their manual states, "...with a little bit of work, phenomenal things are possible". From what I've seen in playing with the Microtroll package, I couldn't agree more. If you have the need or interest, it's an ideal, high quality package, at a reasonable price.



### **ABOUT THE AUTHOR:**

Robert Baker runs the popular New Products forum on QuantumLink. He has written extensively about personal computers since the early days of this industry, and his credits include Byte, Compute!, and Commodore magazines. Bob's articles have been a regular feature in the pages of The Midnite Software Gazette, and we're happy to welcome him to INFO. You can reach him on QLink as RBaker.





# C128 BASIC COMPILERS

by Robert Umfer

**BASIC-128** \$59.95  
Abacus Software  
P.O. Box 7211  
Grand Rapids, MI 49510  
616-241-1108

**INFO-rated**



This 128 BASIC compiler does what the others do and more! Compiles to pseudo-code or true machine code. Results are faster than the competition in both P-code and M-code. Relatively long compilation times are worth the wait. Printer and second-drive options would make this compiler just about perfect. Copy protected. -RU

**BLITZ! 128** \$59.95  
Skyles Electric Works  
231 E. South Whisman Road  
Mountain View, CA 94041  
415-965-1735

**INFO-rated**



An excellent BASIC 128 to P-code compiler. Supports optional double disk drive or two separate drives. Compilation time and runtime of compiled programs is very good. Error messages are sent to the printer and/or the screen. User-port dongle protected. -RU

**GNOME SPEED** \$59.95  
Kira Corporation  
P.O. Box 129  
Kutztown, PA 19530  
215-683-5699

**INFO-rated**



A good 128 BASIC to P-code compiler that could be better. The fastest at program compilation of those we've tested. It compiles most BASIC 7.0 commands, but omits some. Its compiled programs ran fast, but still slower than those created by other compilers. Separate runtime module saves disk space, requires an extra load at runtime. Unprotected. -RU

When you first turn on your C128, it is ready to process any BASIC program that you type in or load from your disk drive. When you enter RUN, the system's *BASIC interpreter* translates the BASIC program statements into a language that the C128's 8502 CPU can understand. (The CPU, or Central Processing Unit, is the integrated circuit that is the "brain" of your computer.) The program is converted, a step at a time, into *machine language*, a series of ones

and zeroes which makes sense only to the CPU.

This is actually very time consuming, although you might not notice it while running a small or uncomplicated BASIC program. But consider the steps involved. The interpreter begins by finding the first line of your program (a PRINT statement, for example); it reads the command PRINT, saves the line number in memory, and translates the command into machine code. It then reads what you want to print to the screen and tracks down any variables involved, as well as parsing any text to be printed verbatim. Next, it finds the PRINT routine in the Kernal ROM and executes it. Finally, your message appears on the screen. Then the interpreter goes back to memory to see which line it just interpreted so that it can go to the next line and do exactly the same thing. The slowness of BASIC is even more evident when your program does many intricate mathematical calculations, or when you are sorting lengthy lists of data.

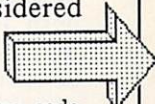
So what can you do to speed up the execution of your BASIC programs (other than learn how to program directly in machine language, of course)? You can use a compiler.

A compiler is a program which reads your BASIC program from the disk, does the necessary translations into machine language all at once, and writes the new file back to disk. The newly-compiled program is still loaded and run like a normal BASIC program. However, since what you have loaded into memory is now readable directly by the processing unit, you will save all the time that the interpreter used to complete this step.\*

There are several commercial compilers available for the 128, all of which will speed up your programs considerably. This article deals with three of the most popular ones on the market: **BASIC-128** by Abacus, **BLITZ! 128** by Skyles Electric Works, and **GNOME SPEED 2.2** by Kira Corp.

For this comparison, I compiled two different programs with each of these compilers. The first finds all prime numbers between zero and 20,000; the second does 729 sorts, each sort containing 3 different fields: an ID number, a name, and an amount. Both are considered

\*Some compilers convert BASIC to a pseudo-machine code which cannot be read directly by the CPU, so the compiler uses a runtime module to act as a translator between the P-code and the CPU. This is still much faster than straight interpreted BASIC.





standard tests of compiler efficiency, for speed of compilation, speed of execution, and compactness of code.

## BASIC-128

BASIC-128 offers you a choice of two types of compilation: to a pseudo-machine code (which is slower than the other, but takes up less disk space), and to true 6502 machine code (which runs at optimum speed).

BASIC-128 compiles every command in BASIC 7.0, which is surprisingly not true with every compiler. A lengthy runtime module is attached to each compiled program.

An optimizer which converts all unnecessary floating-point numbers into integers for a faster runtime is included, as well as an overlay package for running other programs from the compiled program. Many of these directives are programmable by using the REM statements in combination with compiler codes. An 85-page manual in a 3-ring binder is also included. The manual is very thorough, although confusing at times. The disk is copy-protected, but Abacus will replace your copy for a nominal fee.

I have two minor gripes about BASIC-128. One is that a compiled program will erase itself from memory after it has been run. This is a small annoyance, but I see no reason to include such a function. The other is that it does not support the printer while compiling. This is fine if you have very few errors during compilation, but frequently the error reports scroll off the screen. The lack of this printer option forces you to stare at the screen while your program is being compiled.

## BLITZ! 128

BLITZ! compiles a BASIC program into a high speed pseudo-code. It is also the only compiler to offer you a choice of languages when it first runs. It uses extensions to the normal BASIC 7.0 language, as well as program overlays and integer optimization. BLITZ! also compiles all BASIC 7.0 commands, with very few restrictions, and uses the REM directive statements as well. Although the feature is undocumented, BLITZ! sends error messages both to the screen and to the printer. It is also the only compiler which offers you the option of using two disk drives, which is almost a necessity when compiling long programs. This compiler comes with a 31-page manual which is generally clear and thorough. BLITZ! is dongle-protected with a user port dongle (a major nuisance for modem owners). BLITZ! also

appends an 11K-byte runtime module to each compiled program.

## GNOME SPEED 128

GNOME SPEED also compiles a BASIC program into a pseudo-machine code. The newest version includes overlays for variable passing to other programs which can be called by the main program. It compiles most, but not all, of the 128 commands available in BASIC 7.0 (only the most uncommon ones do not compile). Several commands also work somewhat differently when compiled. REM directive statements are permitted. A list of all quirks and options is included in the 23-page manual, which is supplemented by a READ.ME file on the disk of the current version. GNOME SPEED is not copy protected in its latest version, and needs no dongle. Compiling errors are sent to the printer as well as to the screen. Programs compiled with GNOME SPEED must also have a 49-block runtime file on the same disk. This saves a great deal of disk space if you are archiving more than one compiled program on a disk, but requires the loading of two modules to run a program.

### Gnome Speed compiles every Basic 7.0 command except:

AUTO	DSAVE	HELP	SAVE
BOOT	DVERIFY	LIST	TRON
BSAVE	FN	MONITOR	TROFF
CONT	GO 64	NEW	VERIFY
DEF	HEADER	RUN	

## THE TESTS

A compiler makes a minimum of two passes through your program. During the first pass, it reads the BASIC commands that you have typed in and converts them to a simpler language that your computer can understand more quickly. During successive passes the compiler sets aside areas of memory for variables and strings, indicates errors or warnings, and finally adds its own runtime module to the end of your program (except in the case of GNOME SPEED).

In order to see how much processing time a compiled program saves the user, I compiled both above-mentioned BASIC programs to use FAST mode, and set each compiler to perform at its optimal speed by changing the



FOR/NEXT variables to integers and otherwise optimizing the code. Testing was also done in SLOW mode, but the percentages of increased speed were almost identical for each compiler.

GNOME SPEED was the fastest to compile each program, making three passes during the compilation.

It took 41 seconds, 50% faster than the slowest compiler, to compile the prime number program, and 58 seconds to compile the sort program, 39% faster than the slowest.

BLITZ! was next, taking 60 seconds and 73 seconds respectively to compile each program, which indicate a savings of 27% and 23%. It made two passes through the programs.

BASIC-128 was last, needing 82 seconds and 95 seconds to compile the programs, also making two passes through them. For a small program, these times are probably negligible. But for a lengthy program, it could mean quite a difference in time.

Depending on how you look upon it, GNOME SPEED either was the smallest or the largest of the compiled programs. In reality, it compiled a two-block program into a two-block program (and a 3-block program remained unchanged in size as well). However, you can not run either without the 49-block runtime module which must be on the same disk as the compiled program.

BASIC-128 P-Code added 36 blocks to each compiled program. It's M-Code added 38 blocks to each. BLITZ! added 42 disk blocks to each program. Both BASIC-128 and BLITZ! advertise that compilation decreases the amount of disk space necessary, but that will obviously happen only with very large programs.

The prime number program needed 431 seconds (7:11) of processing time in uncompiled FAST mode before all numbers had been calculated. GNOME SPEED improved that time by 70.8%, to 126 seconds (2:06). That seems like an incredible increase of speed, but it was the slowest of the compilers tested. BLITZ! was next, increasing the speed by 79.6%, completing the job in 88 seconds (1:28). BASIC-128 P-Code was third, needing only 42 seconds, a savings of 90.3%. The fastest was BASIC-128 M-code, using

only 23 seconds of processing time, a savings of 94.7%!

The statistics for the sort program were very similar. Uncompiled in FAST mode, this program took 603 seconds (10:03) to complete processing. GNOME SPEED saved 66% of that

time, finishing the sort in 207 seconds (3:27). BLITZ! was third, needing only 162 seconds (2:42), a savings of 73.2%. BASIC-128 P-Code was second, using only 72

seconds to complete the task, and BASIC-128 M-Code finished the entire sort in only 47 seconds, a savings of 92.2%. The following chart shows all three compilers at a glance. (The sort program results are in parentheses.)

All three compilers are excellent. They all compile your BASIC programs into much faster runtime programs. Programs compiled by each occupy approximately the same disk space. They all cost the same. Each has some features that might make it desirable in your application over the others.

But if you are simply looking for the fastest execution times for your compiled BASIC programs, look to Abacus' BASIC-128. Its final results were consistently much faster than the others.

	C-128 (FAST)	BASIC-128		BLITZ	GNOME SPEED
		P-MODE	M-CODE		
SIZE OF COMPILED PROGRAM	2(3)	38(39)	40(41)	44(45)	51(52)
COMPILATION TIME (in seconds)		82(95)	82(95)	60(73)	41(58)
RUN TIME (in seconds)	431(603)	42(72)	23(47)	88(162)	126(207)
PRINTER OPTIONS		NO		YES	YES
TWO-DRIVE OPTION		NO		YES	NO



#### ABOUT THE AUTHOR:

Robert Umfer, as CBM\*BOB, shares the Sysop duties with CBM\*LARRY in the Commodore Club section of American PeopleLink. He has a B.A. in French and an M.A. in computer science. His 'day job' is teaching high school French and Spanish.





# FONTMASTER II

by T.J. Malcom

<b>FONTMASTER II</b> \$59.95 Xetec 2804 Arnold Rd. Salina KS 67401 913-827-0685	<b>INFO-rated</b> ★★★★★
---	----------------------------

Upgraded from the 64 version, this wordprocessor produces high-quality output from just about any dot-matrix printer. All the expected features are here as well as LOTS of formatting commands to use with the wide variety of printer fonts. It also handles about any foreign language, even those written from right to left. You can even include graphics! Not to be missed by anyone needing more than the standard printer fonts. -TM

Fontmaster 128 isn't for everyone--if all you want to do is get words onto the screen, then onto paper, you don't need it. If, on the other hand, you want to play dress-up with your text and print it out in more type styles than you can shake a font at, in just about any alphabetically based language, then this is the word processor for you.

Fontmaster 128 is from Xetec, the same folks who gave us the Supergraphix interface. While the two products are literally made for each other, Fontmaster will work with a wide variety of printers and interfaces. Getting everything set up to work with your particular combination of equipment has been made as painless as possible via a single setup screen. If you want, you can save two separate configurations that will be automatically loaded when you boot the program so you never have to go through the setup process again. I obviously couldn't test every setup, but from past experience with Xetec I would not hesitate to rely on their printer drivers. There are a couple of sample files provided for you to print out so you can make sure everything is working properly. Xetec also has very helpful customer support.

Once your setup is complete, you are presented with an almost bewildering array of options. Menus are rampant; via some startling programming, you are presented with a different menu for each of the 128's various shift keys (CTRL, SHIFT/CTRL, ALT, LOGO). Pressing a second key executes the command. This is online help at its best--it's not intrusive, but is an integral part of using the program. A lot of thought about ease and efficiency of use shows here. For example, a general disk directory is available through two of the menus,

with specialized directories for print fonts and screen character sets available through other menus. All of the expected wordprocessor functions are implemented in a reasonable, intuitive manner. But the necessary word processor functions aren't what make Fontmaster special.

## PRINTER FONTS

The main reason to buy Fontmaster 128 is right there in the name: fonts. Chances are that your dot matrix printer only has two or three built-in fonts, which, if you do much printing at all, you quickly find aren't enough. (As a general rule, I always find that I want one more font than I have available.) With Fontmaster 128, you have a choice of over fifty fonts on the program and supplementary font disks. And if that isn't enough, there's a font editor (that's a *printer* font editor) so you can design your own. What's even better is that a number of the fonts are rendered in near-letter-quality (NLQ), and you can design fonts to be NLQ. This means that instead of going out and buying a new printer with all kinds of features, you can use these fonts to make it look like you have a new printer.

You can load nine printer fonts into memory at once, and while this does cut down considerably on the amount of space you have



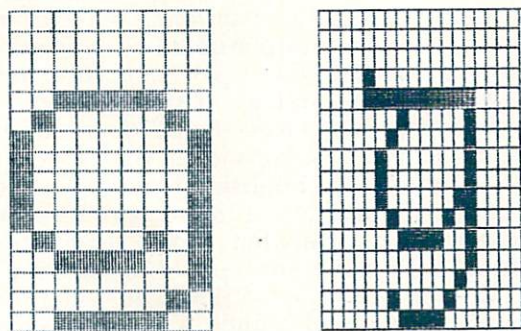
for your document, you're unlikely to be using that many fonts in a single document anyway. (If you are, your document is probably too gaudy.) Fonts can be changed at any point you want, even within a word. The idea takes a little getting used to, but the implementation



makes it so simple to do that you'll wonder how you got along before you had a choice. While the fonts aren't shown on screen, there is a graphic representation of the active font at the top of the screen so you'll at least have some idea of what you're working with. Fontmaster 128 is not a what-you-see-is-what-you-get wordprocessor, but it does have a preview function.

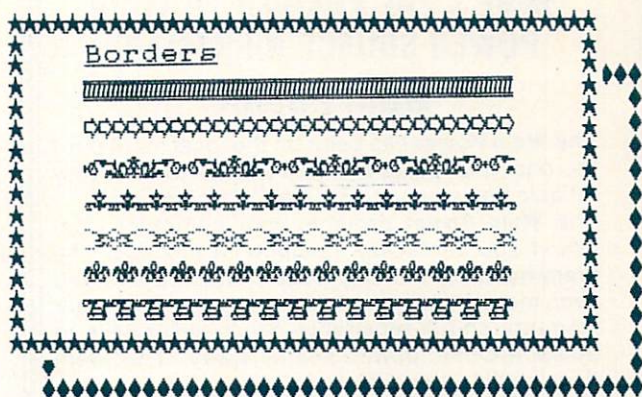
## CHARACTER SETS

So far, all we've been talking about are printer fonts. There are also a variety of screen display character sets that correspond to them. Most notable are the foreign language sets. This is the only word processor I've ever seen that can accommodate so many different languages. And Fontmaster supports not only the usual French and Spanish, but the more exotic, non-roman-character languages like Russian, Korean, Arabic, Hebrew, and the like. Wait a minute...Arabic and Hebrew are written from right to left and the computer writes from left to right! No matter, a couple of keypresses and the screen reverses to print them correctly. Now *that's* a fancy wordprocessor! Provision is also made for languages that require various diacritical marks or vowel points so that you can overlay the required marks on the characters that need them.



Font Editor: Bauhaus normal and Celtic super

I do have a couple of complaints about the foreign character sets. The Russian set is complete, but the keyboard is laid out in a nearly unusable arrangement. Apparently, whoever designed it has never tried touch typing in the Cyrillic alphabet. If you need a Russian word processor, start with this one, but use the included character set editor to rearrange the layout. The Arabic character set is only barely legible and again, the layout is rather screwy. Hebrew fares a little better; but with so few characters in the Hebrew alphabet anyway, a



few already pointed letters would have been a help, and there are plenty of keys to do it with. I would recommend that if you are going to use these character sets, you spend some time rearranging the layouts to suit your own preferences.

A word of caution about using the font and character editors: although they're among the best I've seen, remember to make sure that your keyboard arrangement matches exactly the printer font arrangement. If one of them is different, what you see on screen will look pretty strange when it's printed using another arrangement.

## FUNCTIONS AND FORMATTING

It is in getting text onto paper that Fontmaster 128 really shines. It abounds in formatting and what the manual calls modifier commands. These let you alter everything from typestyle to block indents. Unfortunately, though, while the manual says Fontmaster will handle multiple columns, it doesn't do them very well, forcing you to manually crank the page back to the top so it can print a second column. And just try getting them lined up evenly!

There are a few holes in the program, like the inability to use a dual drive and the lack of a spelling checker. (Xetec has told me that they're fixing the program to include dual drive support, as well as making it compatible with their own Lt. Kernal hard drive.) I am also kind of surprised that Xetec would use a cheesy little cassette port dongle. If you're using their Supergraphix interface, this means that you'll have to piggyback two plugs, and if you have anything else plugged into the cartridge port, you begin to get the feeling that the whole setup is kind of fragile. Incidentally, the diagram in the manual of how to install the dongle is wrong; it shows the thing upsidedown. Be sure to plug it in with the shiny side up. I've also



## ATTENTION ALL VIC, C-64, C-64-C OWNERS

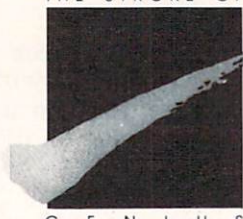
### HERE'S THE ANSWER TO YOUR POWER SOURCE NIGHTMARE

#### Wam Power

The **Wam Power** has been on the local market for the past four years and has proven to be a very reliable power source for the C-64 computer.

The **Wam Power** protects your computer from power source caused component damage. The **Wam Power** is a 3 amp supply which offers you even more protection. It also comes with a 1 year warranty and is repairable. You'll never have to throw another power supply away. The **Wam Power** will last and last!

THE STROKE OF



GENIUS  
**Wam Power**

To get a **Wam Power**:  
Send a check or money  
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...Fontmaster II continued

heard that there are a couple of fastload cartridges that won't work with Fontmaster. I'd like to see the preview function slowed down a little. While you can stop the display and scroll across it, it's a little disconcerting at first to have the thing zip past at a clip that makes it impossible to get a good look at what your document is going to look like.

One of Fontmaster's more remarkable features is the ability to incorporate graphic images into your text. Fontmaster comes with a graphics conversion program which can take just about any hi-res image and incorporate it into the body of your text. You can even change the size of the image if you need to. Also included is a text translation program for converting files from many other wordprocessors. It's too bad more word processors aren't that considerate.

The manual is clear and concise, written by the programmer. It even has a sense of humor--check out the index listings for 'loading' to see what I mean. Mr. Flickinger is to be congratulated for writing both a fine program and a usefully unborning manual.

## CONCLUSIONS

This is the most surprising word processor I've seen yet. It does things I didn't even know I wanted to do, and it makes my printer produce better quality output than I ever dreamed it could. It serves as a sort of bridge to the world of desktop publishing. As I said at the beginning, it's not for everyone, but for many people it will be indispensable. If you have a dot-matrix printer, you need it; if you have a daisy-wheel, you don't. Every school that teaches foreign languages should be required to use it, as should any individual who writes in a language other than English. Many user groups are using Fontmaster 128 to produce their newsletters. No matter how many word processors you have for your 128, go out and buy this one, too. At \$59.95, it's more than worth the price and stands a good chance of becoming your word processor of choice.



#### ABOUT THE AUTHOR:

Tom is INFO's data manager, and you usually see his work in the thousands of entries in the periodic INFO Product RoundUp issues, as well as an occasional Gallery review. We handed this review over to Tom because he's the only person we know who has actually studied Russian, Arabic, and Hebrew, and therefore is qualified to evaluate Fontmaster's foreign language capabilities. He's one talented guy.



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# Public Domain PROGRAMMING AIDS

by Warren Block

The initial dearth of commercial Amiga software was good in some ways; it prompted the creation of an active programming community, for one thing. Many of the early Amiga enthusiasts developed tools to assist them with their programming efforts, and a large number of these utilities then made their way into the public domain. More accurately, most of the programs described here are "shareware"—that is, the author(s) request a contribution if you find their work useful or interesting.

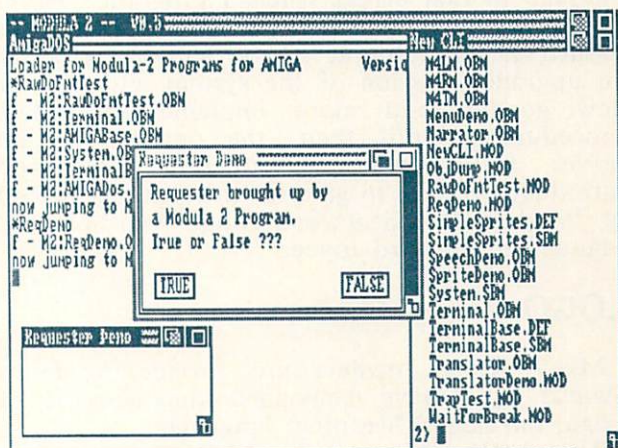
## LANGUAGES

### FORTH

Many people have never even heard of this unusual language, but a shareware version of it exists for the Amiga. If you want to try programming in a language completely unlike any other, try Forth. Forth was originally designed as a method of controlling astronomical telescopes, and thus excels at such real-time tasks. The Amiga version seems to be a complete implementation of MVP (Mountain View Press) Forth; included are modules to interface to the Kernel routines, and many other extensions. It seems to be a very capable implementation. Unfortunately, I have been unable to find even a scrap of documentation for this package. Without some clues as to the operation of the text editor, and the saving and loading of source files, it is impossible to use for non-trivial projects. However, with a good Forth tutorial (I suggest "Starting Forth," by Leo Brodie) and some patience, you can pick up the basics of the language using this compiler.

### XLISP

A couple of years ago, a gentleman named David Betz wrote an article for BYTE (March 1985, page 221) describing a variant of the LISP (LISt Processing) programming language that he had developed. This language, called XLISP, has been ported to many different machines, with the Amiga as one of the latest. LISP, like Forth, has a very different "flavor" than C or BASIC. It was originally designed at MIT for artificial intelligence programming, and handles manipulations of words and characters (lists) very efficiently. XLISP extends the normal



PD Modula-2 for the Amiga.

LISP environment with object-oriented programming features. If you are interested in artificial intelligence and object-oriented programming, or would just like to see what LISP is like, get a copy of XLISP. As a bonus, a large documentation file, some examples of programs in XLISP, and even the complete C source code are included with the package. Although the documentation is mainly reference material, it does recommend some other sources, and is complete enough to get you started. Check out the BYTE article for more information.

### MODULA-2

Not a day goes by that someone doesn't curse the lack of a Pascal compiler for the Amiga. Most of these people seem to be unaware that Modula-2 is practically the same language, and a working public-domain version of it is available for free. What's more, this free compiler comes straight from ETHZ, the school in Zurich, Switzerland, where Niklaus Wirth designed the language! Actually a port from the Macintosh version, this Modula-2 system comes with many example programs in source code form, although the compiled forms must be executed from a special loader. Like most public domain languages, the documentation supplied with this system is minimal, but is enough to give you some idea of how the compiler operates so you can actually write and compile some code of your own.





...continued

The biggest problem is the lack of implemented system procedures; for example, WriteInt (a procedure to display an integer number) is unimplemented, and displays a message to that effect when a program tries to use it. Any Day Now (as they say in this industry), the folks at ETHZ will be releasing an upgraded version of the system with lots of new goodies and more implemented system procedures. Until then, the current version serves as a good introduction. A good introductory book to go with this package would be "Modula-2: A Seafarer's Guide And Shipyard Manual" by Edward Joyce.

## LOGO

Many Amiga owners are former Apple II owners, and have bemoaned the absence of Logo, the famed "learning" language.

They shall no longer, for ALOGO is here! A substantial subset of LOGO, Gerald Owens' ALOGO includes most of the important turtle graphics commands, along with some (but not all) of the control and system features of Logo. It follows most of the Apple II LOGO conventions, making adaptations quite easy. In addition, it was written in 68000 assembly language, which makes for a turbocharged turtle.

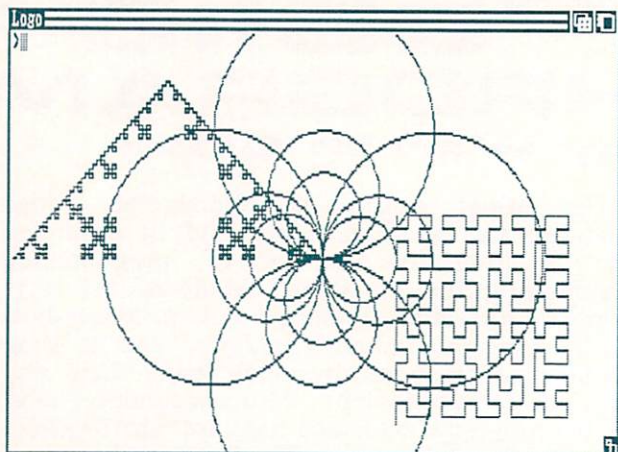
Accompanied by a short but helpful document file and several examples of Logo programs, this shareware package should make many Amiga owners very happy.

## OTHER LANGUAGES

If none of those mentioned above fit your tastes, there are more coming. Several 68000/68010 macro assemblers are available in public domain libraries for those who wish to try their hand at writing small and fast code. In addition, there are efforts going on to implement more compilers, and there are rumors of a version of the Smalltalk language. More advanced programmers may enjoy working on the many incomplete translations that have been made public domain; for example, there is a C compiler that needs a lot of effort before it will work.

## DEVELOPMENT TOOLS

Let's not kid ourselves: the Amiga operating system is a complex set of software, and writing programs that work with it is not simple. For example, adding menus to your programs can be



*PD LOGO for the Amiga.*

a real pain--there are so many details and numbers to enter, and no easy way to see what the finished product will look like without actually compiling the program and running it. However, several utilities exist to make such tasks easier. David Pehrson's **Menu Editor** is a good example. Using this program, you can design a complete menu system, complete with key shortcuts. After designing the menus, you can actually try them out. Making changes is easy, and because you can save your work to disk, there is no hurry to complete your design in one session. When your design is completed, the final product may be printed or saved to disk as C source code for direct incorporation into your program. Even if you aren't using C, the constants and variable values produced by this amazing program make it well worth having.

In addition to the Menu Editor, there are many other programming tools available as shareware or public domain: a gadget editor, several sprite editors, and utilities that convert an Aegis Images or DPaint brush into C source code for an Amiga BOB (blitter object) are all readily available.

The much-hated ALink linker that comes with the Lattice C package has been replaced with BLink, a public domain program from the Software Distillery that does everything ALink does, only about twice as fast. The time these utilities can save will be much greater than that spent in acquiring them. The price isn't bad, either!

## AVAILABILITY

The best place to look for these programs is in your local user group's public domain library.



Alternatively, a good mail-order source is Amazing Computing (P.O. Box 869, Fall River, MA 02722--\$1 for listing of current software available). Subscribers to Amazing Computing can get any disk in the public domain library for six dollars, while non-subscribers pay only a dollar more.

Another good source for those who live in the more metropolitan areas of the country are local bulletin boards.

Most are free or low-cost, and active ones usually have the latest and greatest public domain programs ready for downloading. Sometimes you will find a documentation file written by someone who has discovered some of the intricacies of a public domain language or utility, too.

## CONCLUSIONS

While some may attempt to use shareware or public domain compilers as program development tools, I would recommend against it. The support and documentation present in commercial versions makes up a large part of their price.

What the free languages are good for is "test-driving"; that is, getting a free or low-cost chance to try out or learn the basics of a language you may be interested in.

The programmer's tools, like the Gadget and Menu editors, though, are well-suited for use by all Amiga programmers looking to make their lives easier. Like the compilers, these programs don't have the support or documentation of commercial versions, but are generally usable without such support.

Lastly, when you find a shareware tool that makes your life easier, send the author a contribution. This will help reimburse them for the time and effort they have spent in creating it, and insure that they will contribute even more in the future.



### ABOUT THE AUTHOR:

Warren Block is a free-lance writer who specializes in writing about the Amiga. His articles have appeared in COMPUTE!, Amazing Computing, and BYTE magazine. During daylight hours, he sells Amigas and other computers in South Dakota.

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# HANDS ON AMIGA HARDWARE

## THE AMIGA 500

AMIGA 500 \$699  
Commodore-Amiga  
1200 Wilson Dr.  
West Chester PA 19380  
215-431-9100

INFO-rated  
★★★★+

The A500 has v1.2 of KickStart in ROM, and comes with 512K standard, expandable to 1 meg internally. The keyboard is much improved over the A1000, and it has a monochrome output rather than composite video. An incredible powerhouse for the money, this may become Commodore's most popular computer ever! -MB



When Commodore announced the A500 and the A2000, they were planning to introduce the 2000 first, with the 500 following about two months later. But public demand for the less expensive model was so overwhelming that Commodore switched priorities in mid-stream, putting the A2000 on the back burner while they pushed hard to get the A500 to market. The last week in May, one week before the CES and COMDEX shows, Commodore delivered limited quantities of the Amiga 500 to dealers. They have ramped up production of the machines as rapidly as possible, but dealers can't keep them on the shelves!

## FEATURES

The Amiga 500 has all the capabilities of the A1000, plus some. It comes with 512K of RAM standard, with an internal connector for an additional 512K of expansion RAM. The \$150 RAM expansion unit also contains a built-in battery backed-up clock. We think the inexpensive internal RAM expander will establish one megabyte as the new standard Amiga configuration.

The I/O ports on the A500 are all located on the rear of the machine--all of them, even the mouseports. This might make it harder to plug in a mouseport dangle for copy-protected programs like Leader Board. The serial and parallel port connectors are now IBM-compatible, and Commodore says you can use off-the-shelf IBM cables. There is an external drive connector for a single additional drive, and the RGB port is the same as the A1000's, as are the stereo audio output jacks. Since the A500 uses an external power supply not unlike

the C128's, there is also a jack on the back for the power supply connector.

The A500 power supply is smaller than the A1000's. It is designed to provide power to the A500, the internal RAM/clock card, and a single external 3.5" disk drive, period. Anything else you plug in, including hard drives and external expansion RAM, must be externally powered. You can look all over the A500 and never find the power switch; to cut costs a bit, it is located on the power supply. If you put your supply on the floor, it will be difficult to switch the 500 on and off. We suggest using a power strip to turn on everything at once.

The A500 has a monochrome output jack instead of a composite video output. There's been a lot of controversy about Commodore's decision to change it. On the one hand, the composite on the A1000 was pretty fuzzy anyway. But proponents of composite output argue that Commodore should have cleaned up the composite video, not gotten rid of it. Those who favor the monochrome output point out that it is of excellent quality. They say the Amiga needed a good, clean monochrome output to compete with the Atari ST and make an impression in the business market. Personally, we wish they'd included both. There's an RGB-to-composite adapter coming soon from Commodore, so the controversy should end there. The monochrome output is very good, and will quiet those who've been pointing out the ST's "superiority" in that area.

## THE LOOK AND FEEL

The 500 looks sharp. It is very compact for so much power. The deep-cut AMIGA logo in the top of the case is nice design, and we wish Commodore had back-lit it with some LEDs to highlight it even more!

The integral keyboard is great, and has all the features you wish the A1000's keyboard had. The numeric keypad is expanded, with all four



standard numerical operators. The cursor keys are in a separate T-shaped pad. The keyboard feels solid, and has a good action. An additional feature of the new keyboard is *n-key rollover*. This allows you to type ahead or even strike several keys at once and not get ridiculous characters appearing on the screen.

The low-profile disk drive is mounted in the right side of the case, where it's very handy (if you are right-handed). The drive activity light is on the upper right-hand corner of the keyboard, next to the power light.

The expansion buss is on the left side of the A500 case. It had to be put there because the drive is on the right. The placement of the expansion connector and the lower power output of the A500 power supply are the reasons that the 500 can't use A1000 expansion devices, at least not without extensive modification.

Booting up is a simple, one-step process, since KickStart is in ROM. You just insert the WorkBench disk. The startup-sequence on the supplied WorkBench disk does three things of interest: (1) It automatically opens a RAMdisk--very nice on a single drive system, unless you need every byte of 512K for some application. (2) It comes up in 60-column mode--okay for a composite screen, but 80-column would be better for the A500's RGB or monochrome output. (3) It leaves the CLI icon off--you have to wade through some documentation to find out how to turn it on if you don't know how already.

## MANUAL AND SOFTWARE

The manual is probably one of the best Commodore has ever done. There are concise, clear sections covering everything from setting up the A500 to using the CLI. The whole book is profusely illustrated, and there are useful appendices, system schematics, and an index. AmigaDOS is covered to some degree, but the AmigaDOS Users Manual is recommended for detailed information on using DOS commands. Printer commands, AmigaDOS error codes, and other useful information are all there, though. It's a good book.

Since Kickstart is in ROM, the only disks you get are v1.2 of WorkBench and the Extras disk. There's a new DOS command to set the battery clock in the A500 RAM expander, and a new utility to lock out Fast RAM for those older programs that will not run with it in place. (You will not be able to run a few older programs that insist on v1.1 of the operating system, but that should be a short-term inconvenience.) The Extras disk includes several useful programs in addition to BASIC, including a performance monitor, some file utilities for use with a 5.25"

drive, a font editor, the MicroEMACS editor, and more. All are nice additions to your Amiga utility library.

## CONCLUSIONS

The A500 is a fantastic little machine. It's compact, good-looking, and works great. At a retail price of \$699, no other personal computer can touch it. There is good reason for the A500 to be in short supply--we think Commodore will sell millions of them! For the first time, someone has come up with a computer that has the potential to rival the Commodore 64's popularity. And it wasn't Atari, or Apple, or IBM that did it--it was Commodore!

## THE AMIGA 1300 GENLOCK

A1300 GENLOCK \$199

Commodore-Amiga

1200 Wilson Dr.

West Chester PA 19380

215-431-9100

Though the controls are practically inaccessible and the composite video output could have been much cleaner, the Genlock lets you add spectacular Amiga audio and video effects to your videotapes. It's most useful if you have access to 2 VCRs so you can save the results. For the A1000 only, though you might be able to cable it to the A2000.

-MB

INFO-rated

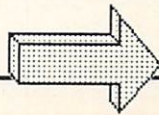


One of the peripherals Commodore promised for the Amiga from the very beginning was the Genlock. It's been a long time coming. It was sent back to be re-engineered several times to remove the bugs, but now all the waiting is over and the Amiga model 1300 Genlock is here. Was it worth the wait? Well, that depends on your expectations.

## A SYNC

What we will be calling a Genlock is what video pros call a *sync*. The Genlock synchronizes the video output of the Amiga with an external video source so that a portion of the external video can be overlaid on the Amiga video output. This is accomplished by having the Genlock generate the clock signal for the Amiga. When you run the Amiga with the Genlock plugged in, the Amiga is actually getting its internal timing pulses from the Genlock.

The net result of all this is that when you throw the right switch, the Amiga's background





color becomes "transparent" and your monitor displays the external video in its place. If your external video source is, say, a VCR, you can have Rocky and Bullwinkle cavorting around behind your Workbench icons.

This is similar to *chroma key*, the technique that TV stations use to let their weather person walk around in front of an electronic weathermap. The net visual effect of the TV weathercast chroma key is, however, the exact opposite of what you will see with the Genlock. On the weather report, the person walks around in front of the weathermap; on your Amiga, video people appear behind the Amiga screen, peeking out through whatever holes of background color are left open.

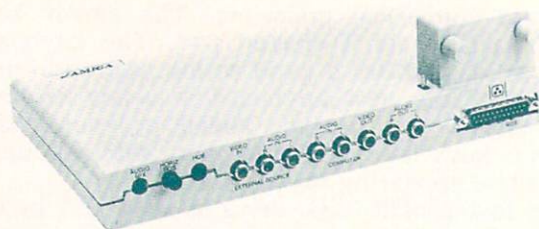
For the purposes of the Genlock, "background color" is *always* defined as the first color register in the Amiga's palette. The WorkBench uses this color as the background, as do most Amiga programs. But the *apparent* background color of any given screen does not have to be taken from this color register. For example, you can select another color as the "background" in Deluxe Paint and "clear" the screen with it. If you do, the Genlocked image will not appear through the new background color. It will, instead, only peek out through holes defined by the color in the first box in DPaint's palette, the first color register.

## PLUGGING IT IN

The Genlock is made to slide into place under an Amiga 1000--it will not work with the A2000 directly because the unit won't fit under that machine. In highly hazardous and technical experiments conducted here at INFO Labs, we found that you can make the Genlock plug into the A500 if you prop the computer up about 2" off the table, but the A500's power supply won't handle the extra current drain. (You will almost certainly see Genlocks for both the A2000 and the A500 soon; in the A2000's case, it will be a card that fits into the internal video slot.) It should also be possible to use a custom RGB cable to connect the A1300 Genlock to the A2000. As a side benefit, the Genlock would add color composite video output to your A2000, which doesn't have it built-in.

The Genlock slips right into place under the A1000 and connects up very nicely. Once it's installed, you'll want to leave it there, because removing it is not a trivial task. All the cables get in the way.

The Genlock plugs into the A1000's RGB port and provides a pass-thru for the monitor. There are additional connectors for composite video out, stereo audio out, Amiga stereo audio in, and external video and stereo audio in. There



are three very small controls for audio mix, horizontal position, and hue that are located right under the parallel printer port. If you have a printer cable connected, you will have trouble getting to them. There is also a small switch to select Amiga only, source only, or combined video, but it's hidden in the middle of the back of the machine, around on the inside of the RGB connector. With the controls where they are, you'll have to feel for them or set up your Amiga someplace where you can easily access the back of the machine.

## USING THE GENLOCK

Using the Genlock is easy. You just plug in an external video source, like a VCR or video camera, and boot up your Amiga as you normally do. Because it's a totally hardware device, you need no system software to make it work. The only thing you may want to do is recenter your screen using Preferences. The Genlock, for some technically-detailed reason, drops your video display by 5 lines.

From then on, when you set the selection switch to *overlay*, the Amiga background color will disappear and be replaced by the external video source. You can also use the switch at any time to check the source video only, or to return to a normal Amiga display.

## VIDEO QUALITY

For some reason, there's a considerable amount of folklore built up around the Genlock already. Rumors that you need a professional video timebase generator for stable video from the Genlock are totally false. The output is perfectly stable. We've heard that early Genlocks had a tendency to "flip" the video display if there was no active external video source, but we're happy to report that that is *not* the case with the unit we tested. The video was solid.

The RGB output is good, and it can be improved considerably if you feed it through a video processing amplifier with separate video gain, sync, chroma, and hue controls.

The composite video output, unfortunately, is fuzzier, though it is better than the Amiga's own composite output. After all, the video



bandwidth of the RGB signal is *twice* that of the composite--that's a lot of detail. For home use, you can get by with the composite output. With enough color and animation going on, the odds are good nobody is going to notice if it's a little fuzzy. If you are planning on using the Genlock for video production work, though, you'll get your best results if you can use the RGB output and condition it through a proc amp.

## WHAT DO YOU DO WITH IT?

This is a fun device, but what exactly can you do with it? Here are some ideas:

You can use the included TitleCraft software to add scrolling video titles in colorful Amiga fonts over your home videos. To be honest, the software is not that good, and if you are serious about doing video titling we suggest you check out one of the third party titling programs. Of course, TitleCraft does have the advantage of being 'free'.

You can hook the Genlock up to a broadcast video source and tune in a ballgame, boot up Deluxe Paint, and draw your own circles and arrows on the screen, just like John Madden!

You can feed a videotape of live action into the background of your paint program to let you trace caricatures or portraits of friends and family. That's what Andy Warhol used *his* Genlock for.

You can use the same technique to produce animated cartoon frames from live action videos. Just use the freeze-frame feature on your VCR to stop the motion while you trace.

You can analyze your golf swing by tracing line-drawings from videotapes of you in action.

If you have access to 2 VCRs, you can add voice-overs and background music as well as Amiga-generated graphics to your home video movies. The Genlock can mix *any* two stereo sound sources for its output. These will usually be the Amiga audio and the external source audio, but there's no reason that they have to be.

You can use an animation program to add fun "rock-video" effects to your home videos.

You can set it up at a party and have guests sit in front of your video camera while you draw funny hats and mustaches on them. (Actually, this works even better with a video digitizer than it does with the Genlock.)

You can even use it to watch "I Love Lucy" reruns in the background while you do some serious computing in the foreground!

Really, like all imagination tools, the uses you find for the Genlock will be as varied and as interesting as your own ingenuity. And like most *good* imagination tools, the Genlock is simple

enough to set up and use that it will not get in the way of you realizing your ideas.

## CONCLUSIONS

The Genlock suffers from controls that are practically inaccessible and composite video output that is just acceptable. But it adds some exciting new capabilities to your Amiga, especially if you have access to two VCRs. If you are interested in getting video images into your Amiga and manipulating them, then you don't need a Genlock; you need a video digitizer. But if you are interested in adding effects to videos, the Genlock is what you are looking for.

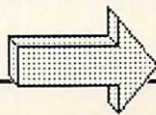
## THE AMIGA SIDECAR

AMIGA SIDECAR \$999 Commodore-Amiga 1200 Wilson Dr. West Chester PA 19380 215-431-9100 The Sidecar adds MS/DOS compatibility to the A1000. It works, but it is large, kludgy, and expensive. The documentation is abysmal. It was not designed to be used with Amiga expansion RAM and has only 256K of PC-side memory. It comes with an integral 360K 5.25" MS/DOS drive and software that allows Amiga/PC file transfer and sharing of Amiga drives and printer. We suggest you either buy a clone or invest in an A2000 instead. -MB	<b>Info-rated</b> ★★★
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## THE MS/DOS CONNECTION

The business world runs on MS/DOS. If IBM has done nothing else (and some might argue that they haven't), they have given the world a standard in the MS/DOS operating system. Apple has bucked the system for years, and they have consequently had a hard time getting any Macintoshes into the business community. The only place they've been very successful is in the area of desktop publishing, where the merits of the Mac so outweigh those of the IBM/PC that the question of MS/DOS compatibility fades into the background. But even Apple is now promising a plug-in PC compatibility card for their new Mac models.

Commodore promised an MS/DOS compatibility path when the Amiga was introduced. Their first product to provide some degree of compatibility took a software approach. The Transformer software emulates a PC and can use a 3.5" or the Amiga external 5.25" floppy drive to read MS/DOS files and programs. Its major problem is speed. It runs





most of the major IBM productivity titles (Lotus 1-2-3, dBase II, etc.), but it does so at about 60-70% of normal PC speed. It's also limited to a text-only monochrome output. The Transformer is fine for the occasional user who wants to dabble in MS/DOS applications, but it's no good for someone who uses PC software daily.

Commodore's latest answer is the **Sidecar**. This German-engineered A1000-only add-on box contains an entire IBM/PC-XT clone sans keyboard. The computer inside the Sidecar box is based on Commodore's own PC-10 clone. The Sidecar plugs into the Amiga's expansion buss and coprocesses MS/DOS applications under the Amiga's control, supplying its output to windows on the Amiga's display. But does it work?

## WHAT YOU GET

The Sidecar package includes a version of the 1.2 KickStart/WorkBench Enhancer software package, with the Sidecar boot routines and support software added. There is a 5.25" MS/DOS operating system disk and a copy of the industry-standard **GW BASIC**. The GW BASIC and MS/DOS manuals you get are the same ones that are shipped with Commodore's PC clones, and they are very good.

The Sidecar manual itself is only 44 pages long, and is without any doubt whatsoever one of the absolutely worst manuals that has ever been written for anything in the history of technology. The majority of it has nothing to do with reality, and many portions are sketchy, apocryphal, and just plain wrong. Setting up the Sidecar with only this manual as a guide was a real challenge. Getting all the options to work was even harder.

## SETTING UP

Physically connecting the Sidecar to the Amiga is not very hard at all. It slides into place on the expansion port remarkably well. The physical engineering is good. The mouse port connectors also line up fine. If you have external expansion memory or a hard drive with an expansion buss interface card installed, however, you run into your first problem with the Sidecar. Commodore says it isn't engineered to work with anything else on the expansion buss, even if the card is equipped with a pass-thru. (Since the Sidecar doesn't pass the Amiga buss through, it has to be the last thing in the chain.) I tried it with the C Ltd. memory expander and, sure enough, it didn't work. However, we heard stories from others that it *would* work with Microbotics' Starboard II, so I tried it...and it worked! Even

Commodore wasn't aware that this combination would work. I've used this setup without problems for two weeks now. Unless you get lucky and find a hard drive that just happens to work, any hard drive that uses an expansion buss interface card would also be out of the question.

There is no power cord supplied with the Sidecar. Instead, there is a two-foot-long pigtail cord that goes from the Sidecar to the Amiga. You take the power cord out of the back of the A1000 and use that on the Sidecar. You then control all the power for the system from the power switch on the rear of the Sidecar; whether you plan on using the Sidecar or not, it's always drawing power. You *must* always leave the power switch of the Amiga on! If you turn on the Sidecar and the A1000 is not already on, *it will blow your system!* I taped the Amiga's power switch "on" for the duration of our tests and stuck a big red warning sign on it to stop anyone from inadvertently switching off the Amiga while the Sidecar was powered up.

## BOOTING UP

A portion of the Sidecar's operating system apparently auto-boots when you stick in the Sidecar WorkBench disk...at least the internal beeper beeps. To get a display, you have to click an icon. This is where I ran into my first software problem. In an apparent effort to clean up the disk, several files on the Sidecar disk were apparently moved around. Some of them ended up in drawers where they no longer work. Thirty minutes of examining and moving files finally resulted in a disk that worked.

At this point, the flimsy documentation began to really impede my progress. I finally figured out that you must boot up initially with the screen type that matches an internal DIP switch setting inside the Sidecar. After that, you can switch to another screen. Ours was set to the factory default, which meant I had to click on the monochrome display icon first. After that, I could also bring up a CGA color screen. A bit of fiddling around in the MS/DOS manual told me I'd have to use the MS/DOS *mode* command to switch between displays.

## CAPABILITIES

The Sidecar comes with only 256K of PC-side RAM and a single 360K 5.25" disk drive. You can add another 256K of RAM just by plugging the chips into sockets on the motherboard, to give you a system total of 512K. If you want a full 640K, you can plug a 128K PC-compatible memory card into one of the three internal expansion slots. The two slots can be used



however you want to. A plug-in hard disk drive card is a good idea, since the Sidecar's operating system lets you partition such a drive for simultaneous use by both the Amiga and the Sidecar.

The Sidecar's cpu is a standard 4.77 MHz 8088; it has no high-speed option. There's a socket if you want to add an 8087 math co-processor chip. Also internal to the Sidecar is a set of well-hidden Amiga-buss pins that is intended for a 256K Amiga-side memory expansion card. That card, it turns out, is sold in Germany but not in the U.S.

The software allows a PC application to run in a window on the WorkBench screen or in its own screen. The monochrome screen works fine, but text scrolling on a color screen is jumpy. While you are working in a PC window, the Amiga keyboard functions like a PC keyboard, even allowing cursor movement using the numeric keypad.

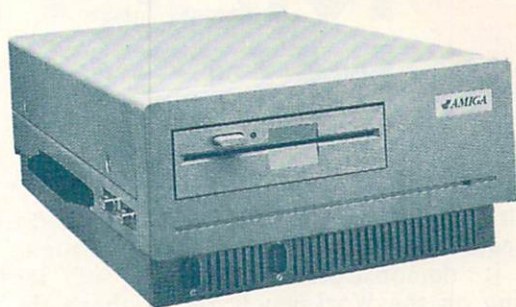
There are utility programs that give the Sidecar additional flexibility. You can optionally configure an Amiga device, or even just a file, to act as an auxiliary drive for the Sidecar. That includes Amiga RAMdisk and hard drives as well as floppies. You can even dedicate an Amiga 3.5" or 5.25" drive for the Sidecar's exclusive use simply by unplugging it from the Amiga and plugging it into the drive connector on the back of the Sidecar.

Additional programs allow you to transfer files between the Amiga and the Sidecar (I found them on the GW BASIC disk rather than on the system disk where the manual said they'd be). If you have just a little bit of text to move, you can do it quickly and easily by cutting and pasting it between the Amiga and PC displays using the mouse and the PC display menu options.

There is also a utility that allocates the Amiga's Preferred printer to the Sidecar. It won't let you *share* the printer, however--you switch back and forth. There are currently no provisions for the Sidecar to use the Amiga's serial port, and you can't use the mouse on PC applications, except as noted above for cutting and pasting.

I spent some time allocating drives, transferring programs, and printing text. All the functions seemed to work fine once I figured them out. The Sidecar manual was usually not much help.

The majority of the PC software I tried worked fine, though some of the test programs indicated that a few vectors weren't quite where they were expected to be. The speed of operation was very close to that of the IBM/PC-



XT itself. One of the higher-resolution CGA demo programs I tried would not give me a normal display, though the lower-resolution software worked fine. None of the monochrome titles had any problems at all.

## AN EVALUATION

If you remove the four screws that hold the cover on the Sidecar and peer inside, you may be amazed at the number of chips in there. The design is from the previous generation and uses mostly off-the-shelf chips. Thanks to the modern miracle of custom chips, the Bridge card for the A2000 squeezes essentially the same circuitry onto a single card. More chips = more potential for something to go wrong.

The design itself is kludgy in several respects, including the strange and unsafe power switch setup and the inability (except through good fortune) to use any expansion RAM for the Amiga. And why they crippled the Sidecar with only 256K of RAM of its own is beyond me. Sure, it's simple enough to add another 256K, but all clones now ship with at least 512K installed. RAM is just not that expensive anymore.

The documentation is abysmal and makes setup of the Sidecar impossible for most people unless they have access to a very inventive expert. The software works fine once you get everything moved where it should be, but it doesn't work as shipped.

With the price of PC clones down around \$700 or less, we have to ask if it's really necessary to glue a PC clone onto an Amiga. If it can be done inexpensively and elegantly, as seems to be the case with the A2000, it makes some sense. Sharing hard drives and transferring files are nice features. On the other hand, if the design is restrictive, the setup kludgy, and the cost prohibitive, it doesn't make much sense at all. The Sidecar is an interesting piece of hardware. It's fun to play with (once you figure it out) and it works. But there are better, cheaper solutions to the problem of MS/DOS compatibility.







# MULTITASKING HIGHWAYS

by Peggy Herrington

Multitasking is probably the most talked about and least understood feature of the Amiga. I've seen it demonstrated with gobs of DEMOs running on the Workbench and if that's the way dealers everywhere do it, I wonder why Atari even bothers to claim it's useless. But I'm here to tell you that multitasking is alive and well and I think it's the greatest thing since freeways. With it, my Amiga and I get more work done in less time than we used to, and every time I fire up another kind of computer, I mourn its loss.

Which is one of the problems, of course. Few users have any experience with multitasking since the Amiga is the first micro to offer it. That means there are not a lot of success stories around. And there's so much to the machine that productivity (which is what multitasking is all about) has pretty much taken a back seat to graphics and sound. To complicate things, what I do with a computer is probably different than what you do, which means that the programs I'd multitask may not be appropriate to your situation.

## WHO NEEDS IT?

To top it off, multitasking is rather mysterious. Everybody knows computers do games and words but why would you want to run more than one program at once? You've only got one brain (right?) so unless you're the type who prints books or sorts humongous databases, you might be wondering who needs it.

I need it -- and so do you, although you might not know it. In its simplest form, multitasking lets you load more than one program at a time. There's convenience and expediency in that, if nothing else, and the number of programs you can fit inside is limited only by computer memory. With one major qualification, the more memory your Amiga has, the more you can stuff in there and still have space to work. Even with 512K (which still *sounds* like a lot to most of us) you are limited in what you can do, which makes multitasking the best reason in the world for investing in expansion memory. Once you get used to more RAM, you'll never want to do without it. Going back to a single-tasking system is like living in a house with one electrical outlet per room; you suddenly resent climbing behind furniture to unplug the radio so you can plug in

the TV. (And all that racket about Windows and desktop accessories in IBM circles is nothing more than plugging octopus expanders in those outlets!)

## DOING IT IN A VOLKSWAGON

Let me give you an example. In my last SOUND ADVICE column I wrote about several programs that use the built-in speech synthesizer. I told how a number of programs use speech, and I've written similar things both about and using other computers. From past experience I've learned that I must *use* the programs I'm planning to write about and make copious notes before I fire up the old wordprocessor and start the article. Although I work from an outline (which isn't always on paper) and know in general where I'm headed, I sometimes write myself into a corner. You see, I'm never sure exactly which details I'll end up comparing with what as I write. And if I need information that's not in my notes (which Murphy's Law usually sees to), I have to quit the wordprocessor, load and run the software in question, check out what I need to know, write it down, quit that program and possibly wade through the sequence with another program before I can reboot the word processor and continue with the article. While it isn't fun, when I'm writing about one or two programs it's generally just an annoyance. But when I'm dealing with 8 or 10 of them and a multitude of details, that process alone can determine (1) the content and accuracy of an article and (2) whether or not I'm able to meet a deadline.

## THE MASERATI

But with multitasking, I don't have to sweat it. Sure, I still put the individual programs through their paces and make my notes and outline beforehand, but there's none of that powering down to check out something and then rebooting the wordprocessor when I write the article. I just load the programs "behind" the wordprocessor and switch screens. Once I've checked out what I need to know, I flip back and continue writing. But that's not all multitasking lets me do in my work. Since I have 2.5 megabytes on my system (512K internally plus RS Data System's 2-meg RAM expansion board) I can just about *vaa-ROOM* to my heart's content. For example, consider that

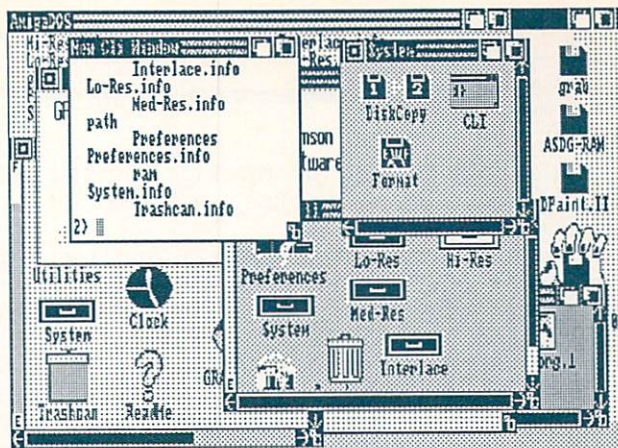


SOUND ADVICE column I mentioned. In the first place, I've altered my startup-sequence in the S directory so that (among other things) it leaves a CLI open. It also automatically runs a public domain terminal program I like in addition to ROBOTROFF and Amiga WordPerfect, which I am beta testing for WordPerfect Corporation. While that was loading, I put my INFO data disk (the one I store all my articles on) in the external drive; when WordPerfect appeared, I retrieved the generic article heading and page format I use and the Talking Programs outline I'd done from previously saved files and combined them into one unit on the screen. I dug out my notes and began by writing the conclusion first (I often start writing in the middle somewhere to get past that blank-page syndrome) and I deleted the outline entry after I'd written it. That done, I pawed through the programs themselves and decided that Talker (from Finally Software) was the one I wanted to start with. As I was writing, I realized I could illustrate some of the details in a Talker screen shot, so I saved the article-in-progress to disk (just in case) and used the gadget in the upper right corner of the screen to switch back to the CLI.

I clicked in the CLI window to activate it, put the Talker disk in the external drive, checked the directory, and typed RUN TALKER. A few seconds later -- voila -- there it was! (Actually, I cheated some. I had Gizmoz HotKeys installed in the background which "typed" some of the commands for me (like CD DF1: [RETURN]) when I pressed a pre-defined key combination (in this case, Right-Amiga/1). HotKeys saves me beaucoup time because it never makes typos.) Anyway, next I put some text on Talker's screen and arranged it so it would clear the Talker Speech Control window when I brought it into view.

## POWER WINDOWS & STEERING

It was about then that I realized I hadn't activated Grabbit. Grabbit is a nifty little utility program from Discovery Software that lets you save just about any screen as an IFF disk file. You end up with a picture of a program and it's a dynamite tool for submitting screen shots to a publisher. I switched back to the CLI, and replaced the Talker disk with my INFO data disk. I wondered how full that disk was getting so I typed INFO at the CLI prompt (no, I'm not kidding--that's the Amiga command for disk information) and sure enough, it had only about 100 free blocks left: time for a new data disk. I put a new blank disk in the external drive and typed the



*Multiple windows on a single screen.*

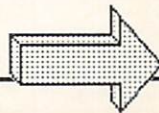
FORMAT command. Although it doesn't take all that long, I hate sitting there watching a disk being formatted so I switched back to WordPerfect and began writing the start of the article which, for me, is the toughest part. A while later I quit in midsentence (I always do that when I stop writing so I can get started again easily when I return to it), replaced the new INFO data disk with the old one and switched back to the CLI. I copied the Grabbit files from there to the internal RAM: drive, put the new data disk back in the drive and copied Grabbit from RAM: to it. That done, I ran Grabbit and told it to put the screens I would save later on that same disk. Then I switched back to Talker and did just that -- saved to disk the screen shown with the article.

Magazines like to print captions with photos and screen shots so I went back to WordPerfect and selected NEW from the first pulldown menu to open a second text window. Being able to write a caption while switching back to check facts in the article, screen shot or even the program itself is a writer's dream come true, and I couldn't do that before multitasking.

## LIFE IN THE FAST-LANE

After I finished with Talker, I proceeded through the other programs in a like manner, writing more of the article, grabbing screen shots and putting together captions. The only program mentioned in that column that I had problems with was InfoMinder from Byte by Byte. It's an older design, and not only does it seem to take over the entire system, Grabbit won't grab screen shots from it.

Even when I had several programs running concurrently, I experienced very little slowing of the operating system, but I did notice it took longer to switch screens. Since WordPerfect will let you do other tasks while it prints, I played around with the games on Jenday's Conversation With A Computer while my article was printing -- what fun! I also had the Gizmoz Cuckoo Clock alarm set to remind me that real-world







...continued

activities (like picking up the kids and starting dinner) wait for no (wo)man, on deadline or otherwise.

Although I personally prefer working from the CLI, most of this can be accomplished from Workbench using tools and clicking on program icons. Most, but not all. If you really want to use the Amiga's multitasking environment to full advantage you'll get into the CLI. It's not bad once you get the hang of it. Learn to use the RAM: drive, too. It's a life-saver for single drive systems as you can reASSIGN oft-used system commands there and use the internal drive for program and data disks. If you have access to one of the shareware or public domain non-deletable RAMdisk utilities (like the one

from ASDG), your RAM-resident commands and programs will even survive a warm boot!

## EXIT RAMPS

Because of the way the system handles graphics and sound, it's important to QUIT or exit programs properly when you're multitasking. In order to function properly, all the graphics and sound data must reside within the 512K bytes of internal "chip" memory in the Amiga itself, no matter how much external memory your machine has. While program instructions will automatically be moved into external RAM, if there isn't sufficient internal memory for a program's sound and graphics



## Multitasking Side Trips

1: It's best not to attempt multitasking with V1.1 operating system software -- use Amiga Enhancer Software V1.2. It's available at most dealers and is the wisest \$15 you'll ever spend. Make working copies of the disks and put the originals away for safe keeping -- you can trash a disk easier than you'd think! But don't get rid of those old V1.1 disks, because some programs that were developed with them (particularly some early demos and games) won't work with 1.2. In general, that means they won't multitask very well either.

2: Remember that you **MUST** click the left mouse button with the pointer on a screen to activate it. The program will ignore you if you don't.

3: What's in the C directory on the Workbench disk you boot from determines what you can do. Those files are system software routines like RUN, CD, DIR, LIST, etc. While many commercial program disks include Workbench, sometimes only those C commands that are required to operate that particular program are included. If you try to multitask from THAT Workbench or use the CLI and one of the necessary commands isn't there, it won't work. You can copy those files from another disk of course (provided there's enough disk space), but you have to do it with the CLI since they don't have icons. (You can also reASSIGN where the system will look for certain files but that would take some detailed explanation.)

4: Speaking of making room on your working copy of Workbench, good things to delete are printer drivers you don't use, EDIT and

DISKDOCTOR from the C directory, the demos and clock. If you run strictly from the CLI, you can get rid of all the .info icon files, too.

5: Like skinning a cat, there's more than one way to switch between screens. If clicking on the back and front gadgets doesn't do it (or if there aren't any!), hold down the left Amiga key (the one with the solid red A) and press the M key. You get back with left-Amiga/N. Another thing to try is pointing at the menu bar and holding the left mouse button while you slide the mouse down.

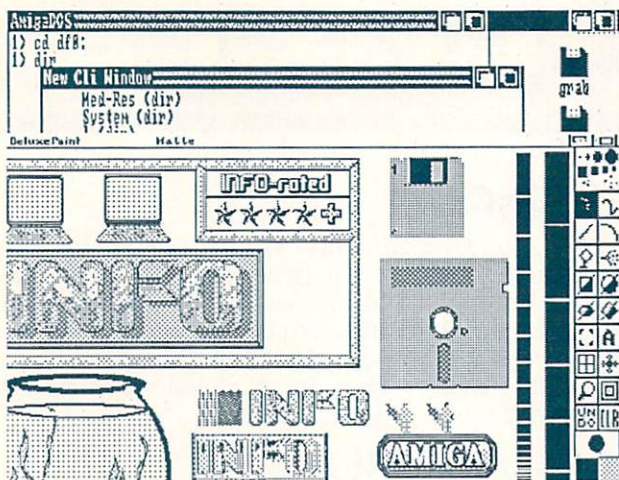
6: Watch out for "hidden" system requestors -- little input boxes that appear when you have a printer problem or try to access a disk that isn't there. Flip through the screens until you're certain one isn't lurking back there somewhere, because nothing else will happen until you've released it by selecting CANCEL or RETRY or pressed left-Amiga/V or B respectively.

7: If you've tried everything but the system seems frozen, you don't have to turn it off to start again. Simply hold down three keys at once: CTRL-Amiga-Amiga (the two A keys on either side of the space bar). This is called a "warm boot". But remember: this wipes out all your entries in memory so save things to disk often.

8: Although it has absolutely nothing to do with multitasking and works best if you're somewhat of a contortionist, here's a little trick you can do from the Workbench screen: Hold down all four ALT and SHIFT keys, then (with your nose?) press each of the function keys (F1 through F10) one after the next. You'll see the names of all the people who worked on the Amiga in the menu bar at the top of the screen. Nice going, amigos!

-Peggy





Multiple programs on multiple screens.

data (a single hi-res screen, for example, can take upwards of 100K bytes), it won't load. If a program is properly Amigatized, quitting it with a menu item will free the memory it used.

Most programs can be multitasked to increase your productivity -- or your enjoyment -- but it's up to you to put together the "right" combinations. While some games are notorious for taking over the entire system, one way to find out what they're up to is by typing TYPE DF1:S/STARTUP-SEQUENCE from the CLI (provided the game disk is in the external drive). The instructions there are what the Amiga automatically follows when you insert a disk after Kickstart, and you can change what it does by altering that file. I do so with the ED editor (included in the Amiga's C command directory), but I only make alterations on backup copies of disks, *never* on originals.

Give multitasking a try and you'll know why people all over the world, not just in Albuquerque, say it's the greatest personal computer they've ever used. And don't listen to users of other personal computers when they claim it's not worthwhile. After all, you can't appreciate something you've never known.

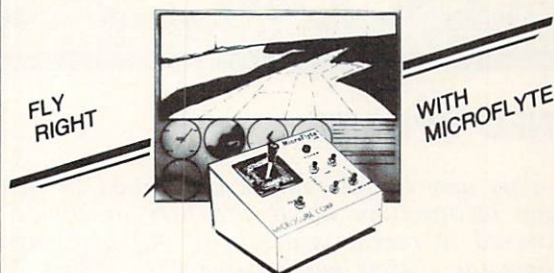


#### ABOUT THE AUTHOR:

Peggy Herrington is a well-known freelance writer in both the Commodore computing and music fields. She got her bachelor's degree ("in music history, English, computer science, and a smattering of other things", according to Peg) from the University of New Mexico, and works out of her home MIDI studio in Albuquerque, surrounded by Commodore computers, synthesizers, kids, and an occasional lizard.

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# INFO UPDATE

## INFO UPDATE

*This new INFO feature is devoted to reporting new information about products or topics we've covered in recent issues. (It will also give us a chance to correct our boo-boos!) -Mark & Benn*

### RAM-BOard PRICE

The price listed in the INFO Product RoundUp (#14) for the RAM-BOard from Techni-Soft was incorrect. The correct price for a 2Meg board is \$599.95. It's available from: Techni-Soft, 5505 Walden Meadows Dr., Murray UT 84123, 801-268-4961. We're sorry for the error.

### TALKER

In Peggy Herrington's look at talking Amiga software last issue, we inadvertently mislabeled the screen shot of Finally! Software's Talker program on page 63--the caption identified it as A-Talk. We hope we didn't mix you up too badly.

### INFO WRAP-UP

Last issue marked the debut of the *INFO Wrap-Up*, two additional pages of INFO printed on the inside pages of our subscription mailing wrapper. Subscribers who received The INFO Wrap-Up for issue #15 got all this extra INFO: a report on the industry reaction to the IBM/PS-2; a report on math bugs that could affect IBM's new computers; an appeal to contribute to local user group newsletters; and information about four new products and an announced upgrade for another. All because we just couldn't fit it into our regular pages! We see this as a way to pass along even more INFO to our readers and to say "Thank you!" to our subscribers at the same time. If you'd like to be reading the Wrap-Up, we invite you to send in the subscription envelope in this issue.

### DISKETTE FILE COPY

Layton Berry's excellent Diskette File Copy program for the C64 (first mentioned in INFO #12) is now up to version 4.1. This latest version works with SFD-1001 and Commodore 8250 drives and includes other features. It is no longer being distributed as shareware, but can be obtained for \$19.95 directly from Layton Berry Software, 573 Merriewood Dr., Lafayette CA 94549.

## WRONG LIZ

Well, once again my fingers seem to have bypassed my brain...in issue #13 I reported that Dave Ahl and Liz Deal had taken over the helm of Atari Explorer magazine. Of course, I meant Dave Ahl and Liz Staples. My sincere apologies to Ms. Deal, who is a loyal Commodore aficionado and expert, first class.

## 1764/1581 PRICES

The good news is that the new 1581 3.5" disk drive for the C64/C128 will be selling for fifty bucks less than what we reported in our review last issue. The suggested retail price is \$249.95. The bad news is that the 1764 is ten dollars more than we said it would be, at \$149.95.

## GBW.RENDER

Dave Wecker tells us he's busy working on a new version of DBW.Render, the shareware Amiga ray-racing program mentioned in last issue's Gallery section. The new version (available "later this summer") will include even more textures (like 'ice'), many new shapes (cones, pyramids, and even 3D text!), and an easier-to-use script format that will be fully compatible with a UNIX raytracing system running on the VAX. His planned realtime editor has hit some roadblocks and probably will not be released, but he is working on an Animator for DBW.Render-generated images, which should be available later this year. By the way, there was a typo last issue in the amount Dave requests for copies of DBW.Render--it should be \$18.00, not \$10.00. Write David B. Wecker, 115 Palm Springs Dr., Colorado Springs CO 80908.

## MICROADS ADDRESS

MicroAds is another company that got its product (Video Display 64) into the RoundUp (issue #14), but not its address. The address is: MicroAds, 145 E. Norman Dr., Palatine IL 60067, 312-991-9415.

## T.H.I.S. ADDRESS

We listed T.H.I.S. (a CAD system for the C128) in the INFO Product RoundUp (#14), but left out the address of its source. The address is: Micro Aided Designs, 215 E. Orangethrope Ave #345, Fullerton CA 94632, 714-680-5179.



## INFO UPDATE

### THREE STOOGES

The new Three Stooges game from Master Designer will initially be available on the Amiga, not the C64 as we reported in our News & Views section last issue.

### TDI MODULA-2

Update by Warren Block

In INFO #15, I reviewed the Modula-2 programming language package from TDI Software. At that time I reported my impressions of the latest version of the software, which had arrived just a few days before my deadline. Now that I've used the package for a reasonable length of time, there are some new observations I would like to relate.

First, TDI's new editor has some real problems. It likes to eat chunks of extra RAM (sometimes), it doesn't correctly display errors in the source code as it is supposed to (sometimes), and is prone to crashing (often). This normally wouldn't be too serious, since any text editor can be used to create source code. In this case, however, there is no other way to see where errors occurred in the compilation of the source code. M2Error, the program that came with version 2.2 of the system, was used for this--but is no longer packaged with the system. There are a couple of ways around this.

You could obtain M2Error from TDI, a user group, or bulletin board and use it with the editor of your choice. Alternatively, a public domain editor called UEdit has been made to work with the system (according to TDI). TDI is aware of the problems with their editor and are trying to fix them, but there should still be a way for people to use a different one if they wish to.

Lastly, the system is memory-hungry in its current incarnation. I recommend at least one megabyte of memory, and two or more would be helpful. The system will run with less, but it will be a tight fit.

In view of these additional notes on this package, I am forced to downgrade my rating of it from four stars to three-plus stars. My views on the compiler and linker themselves are unchanged--that is, they work well and without problems. But TDI will have to make some corrections and additions to truly complete the package.

Modula-2 Programming Language  
TDI Software, Inc.  
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Dallas, TX 75238  
(214) 340-4942



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Disk-2-Disk requires the Amiga model 1020 5.25" disk drive. Dos-2-Dos runs on any standard Amiga. Disk-2-Disk \$49.95, Dos-2-Dos \$55.00. Add \$3.00 for shipping and handling, CA residents add 6% sales tax.



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## PRODUCTIVITY

The Amiga's lack of productivity software has finally come to an end, with respectable wordprocessors, spreadsheets, and database managers now available. The wordprocessor everyone's been waiting for, of course, is **WordPerfect**. It was rolled out at COMDEX by WordPerfect Corp. with much fanfare. Not only does this promise to be a very good wordprocessor, but just the fact of its availability on the Amiga makes the Amiga much more attractive to "serious" users. This is not just a simple port, but a fully Amiga-tized implementation of WordPerfect, with built-in thesaurus, spelling checker, and lots of professional features. Both Commodore and WordPerfect assure us it will be shipping soon.

New Horizons was showing its color wordprocessor for the Amiga, **ProWrite**. This WYSIWYG wordprocessor features not only color text, but integration of IFF graphics into documents.

**Dynamic Word** is MicroIllusions' entry into the Amiga wordprocessing derby. It is multitasking, features a spellchecker and thesaurus, and many other features.

On the database front, Haitex was showing **Acquisition**, which we have mentioned before as a powerful programmable database manager for the Amiga, with massive file capability and graphics integration.

**MicroFiche Filer** is new from Software Visions. This one features the ability to integrate smaller graphics windows, not just full-screen displays. It also allows dynamic editing of the database fields without the need to regenerate the database.

Spreadsheet activity seems to have quieted down a bit. The only new one we spotted was **Haicalc** from Haitex. This 9000x9000 spreadsheet is fully Amiga-tized and allocates memory for a cell only when it is occupied.

**B.E.S.T.** announced the availability of version 2.0 of their **Business Management System**. New features include several refinements of original features plus optional password security.

**Software Advantage** was demoing **Investor's Advantage**, an investment analysis program that features many ways to analyze and chart stock performance.

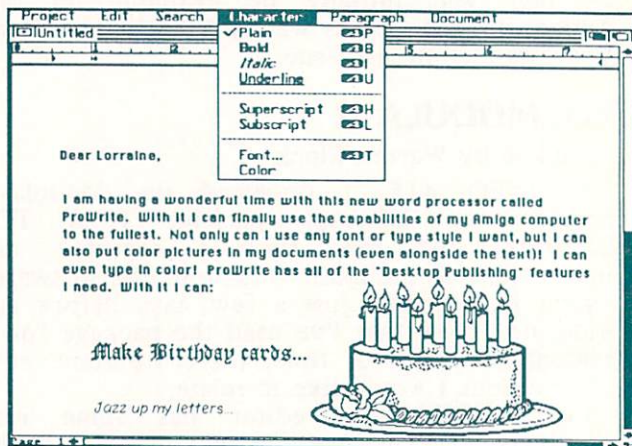
## EDUCATION/GAMES/UTILITIES

COMDEX is a business show, so understandably there was little activity in the educational and games area. ACS had **Quiz Master**, **Grade Manager**, and their **Music Student** series, and First Byte was showing their talking educational library, including **Kid Talk**, **Speller Bee**, and **SmoothTalker**. MicroIllusions will be coming out with **Music-X**, a professional-level MIDI music system.

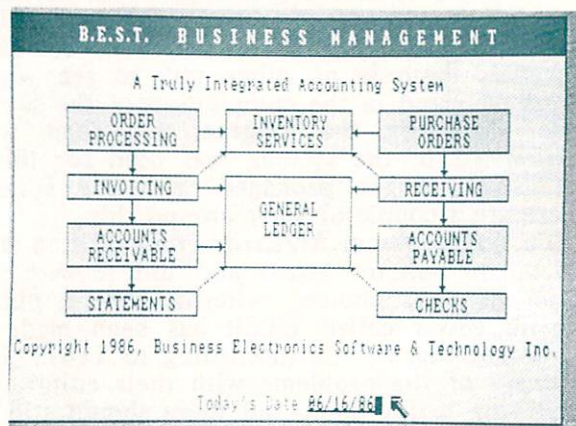
Intuitive Technologies was promising to speed the Amiga's floppy disk drives up to make them perform

## COMDEX REPORT

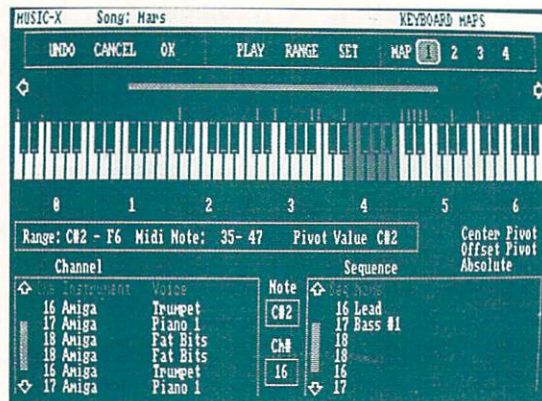
...continued from page 40



*ProWrite from New Horizons.*



*B.E.S.T. Business Management.*



*Music-X from MicroIllusions.*



faster than a hard disk with their **WOW!** disk-caching utility. **Encore** and **ShortCut** are keyboard utilities that buffer and record keystrokes, and provide user-definable keyboard macros, respectively.

## HARDWARE

Amiga add-on hardware was not hard to find at COMDEX, either. Ameristar was showing their networking hardware/software systems. Their **Peer-to-Peer Network** is for Amiga-only nets. They also have controllers and software for interfacing to Sun Microsystems networks and standard IBM/PC Ethernet and Cheapernet protocols.

Anakin Research was again demoing the **EASYL** drawing tablet with the Amiga. It features an icon-installable driver, and can replace or augment the mouse.

ECE R&D's MIDI interface offers MIDI in, out, and thru ports via the serial port, with a bypass for other RS-232 devices. They also offer an Amiga disk drive alignment kit for service centers.

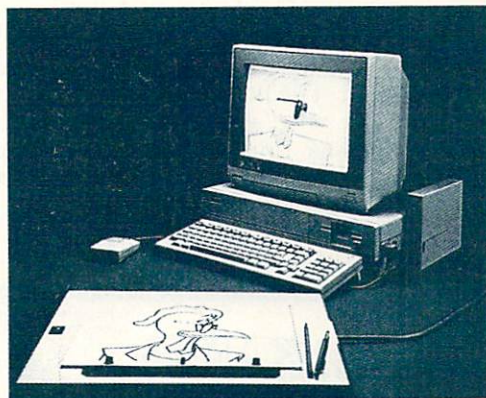
Byte-by-Byte, of course, features lots of Amiga-related add-on hardware. Their new **PAL Jr.** hard drive/expansion chassis sits on top of the A1000 and contains 1 meg of RAM, a battery clock, and a 20 meg DMA hard drive. SCSI support and expansion to 9.5 megs is optional. They are also the first to show outboard expansion RAM for the A500. The **Advantage 500** is a flat box that sits to the left of the A500 and provides a base for your second disk drive. It contains 512K to 2 megs of outboard fast RAM and has its own power supply, a necessity for A500 expansion products. There is a possibility that the unit may ship with a socket for a 68881 math coprocessor chip. Byte-by-Byte is said to have developed a software driver for the chip that eliminates the need to add a 68010 cpu to drive it.

The **Turbo Amiga** also made an appearance at COMDEX. This 68020-driven outboard processing chassis for the A1000 has been very popular in high-end applications, such as at the Lawrence Livermore Labs. It's a true 32-bit, 14MHz super add-on, and a version of the 68020 board it contains will be available as a plug-in board for the A2000, as well.

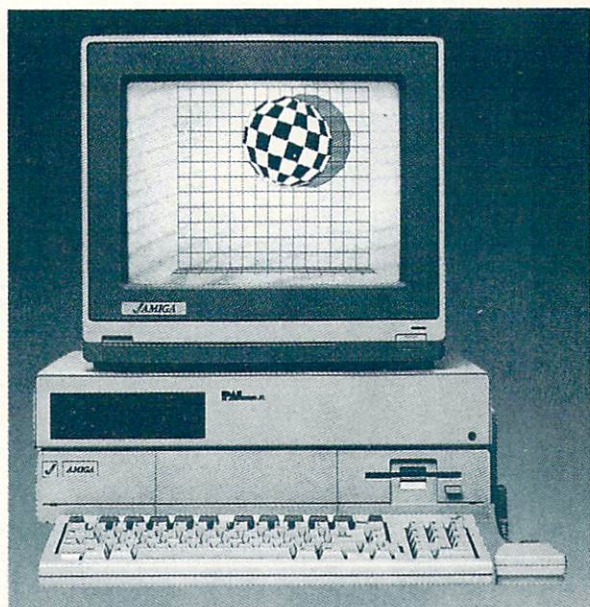
## C64 STUFF

Most of the vendors who develop for the C64 don't think COMDEX is a good place to show their wares. After all, it's a business show and the C64 is a home machine, right? Tell that to the thousands of people who run their business with a C64, or a C128! Anyway, there were just a couple of C64 products at COMDEX.

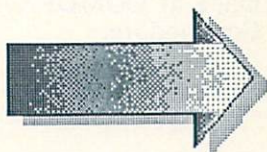
MicroIllusion's new "One on One" game series for the Amiga will be available soon for the C64. Each features three modes of play: you vs. your computer, a human opponent, or a human via modem. Fire



*The EASYL drawing tablet.*



*Byte-by-Byte's PAL Jr. atop an A1000.*





Power, Galactic Invasion, and Turbo kick off the series.

Prestige International was hawking their BBS systems at the show; C-Net 64 and C-Net 128 feature operation up to 2400 baud, XModem and new Punter protocol file transfers, and user-modifiable code.

Timeworks was promoting their new desktop publishing package The Timeworks Desktop Publisher, which they showed at CES.

Chicago Women in Business Inc  
June 1988 - Volume 3 - Issue 14

## THE WORKING WOMAN

### CAREER UPDATE

**THE CHOICE IS YOURS**


The days when working women could be employed only as secretaries, teachers, waitresses, or in similar occupations are, fortunately, a thing of the past.

Today, a woman is a free agent with innumerable opportunities to follow the career of her choice and realize her full potential.

**WOMEN IN SCIENCE**

In the fields of chemistry and nuclear science, as well as computer technology, women have exhibited the skills and dedication to detail that have made them an invaluable asset to scientific pursuits.

**Choosing a career that suits your style**



**THE CIVIC SECTOR**

Government jobs, local or national in scope, are utilizing the talents of women more and more. Police departments, country-wide have found women to be courageous and qualified in this demanding work. As women begin to utilize their

(Cont. Pg 4)

**WOMEN OUTSTANDING IN MEDICINE**

Medical schools are graduating more and more dedicated female doctors, who take their places proudly beside women in fields like research and nursing.

**BUSINESS EXECUTIVES**

Today, women in business are involved in decision-making and company

(Cont. Pg 8)

**INSIDE**

SCIENCE..... Pg. 2

CIVIC SECTOR..... Pg. 4

MEDICINE..... Pg. 6

BUSINESS..... Pg. 8

Sample from Timeworks Desktop Publisher.

## CONCLUSIONS

It was a good show for the Amiga. There was a perception that the machine and the company are both finally hitting their stride. The new models were well-received, the third party developers have filled in the holes in the Amiga's software availability and have moved on to a new exciting second generation of products with capabilities that no machine outside of the Amiga family can match. If Commodore's marketing and management live up to the promises made at COMDEX, it could be a very good year for Commodore.



...continued

## COMDEX VENDORS

- |  |  |
|--|--|
| <p><b>Aegis Development</b><br/>2210 Wilshire Blvd.<br/>Suite 277<br/>Santa Monica, CA 90403<br/>213-392-0735</p> <p><b>Amdek</b><br/>2201 Lively Blvd.<br/>Elk Grove Village, IL 60007<br/>312-364-1180</p> <p><b>Ameristar Technologies</b><br/>PO Box 415<br/>Hauppauge, NY 11788<br/>516-724-3344</p> <p><b>Anakin Research</b><br/>100 Westmore Dr., Unit 11C<br/>Rexdale, ON M9V 5C3<br/>CANADA</p> <p><b>Associated Computer Services (ACS)</b><br/>1306 E. Sunshine<br/>Springfield, MO 65804<br/>417-887-7373</p> <p><b>B.E.S.T.</b><br/>PO Box 230519<br/>Tigard, OR 97224<br/>503-684-6655</p> <p><b>Brother International</b><br/>8 Corporate Pl.<br/>Piscataway, NJ 08854<br/>201-981-0300</p> <p><b>Brown-Wagh Publishing</b><br/>16795 Lark Ave., Suite 210<br/>Los Gatos, CA 95030<br/>408-395-3838</p> <p><b>Byte-By-Byte</b><br/>9442 Capital of Texas<br/>Hwy North<br/>Suite 150<br/>Austin, TX 78759<br/>512-343-4357</p> <p><b>ECE</b><br/>1651 N. Monroe St.<br/>Tallahassee, FL 32303<br/>904-681-0786</p> <p><b>First Byte</b><br/>2845 Temple Ave.<br/>Long Beach, CA 90806<br/>213-595-7006</p> <p><b>Gold Disk</b><br/>PO Box 789, Streetsville<br/>Mississauga, ON<br/>CANADA L5M 2C2</p> | <p><b>Haitex Resources</b><br/>208 Carrollton Park<br/>Suite 1207<br/>Carrollton, TX 75006<br/>214-241-8030</p> <p><b>Intuitive Technologies</b><br/>2817 Sloat Rd.<br/>Pebble Beach, CA 93953<br/>408-373-4018</p> <p><b>MicroIllusions</b><br/>17408 Chatsworth St.<br/>Granada Hills, CA 91344<br/>818-360-3715</p> <p><b>MicroSearch</b><br/>9896 Southwest Freeway<br/>Houston, TX 77074<br/>713-988-2818</p> <p><b>New Horizons</b><br/>PO Box 43167<br/>Austin, TX 78745</p> <p><b>NewTek</b><br/>115 West Crane St.<br/>Topeka, KS 66603<br/>913-354-1146</p> <p><b>Prestige International</b><br/>PO Box 23397<br/>Lexington, KY 40523<br/>606-268-2283</p> <p><b>Software Advantage</b><br/>27246 Charter Oaks Blvd.<br/>Mt. Clemens, MI 48043<br/>313-463-4995</p> <p><b>Software Visions</b><br/>26 Forest Rd.<br/>Framingham, MA 01701<br/>617-877-1266</p> <p><b>Star Micronics</b><br/>200 Park Ave.<br/>Suite 3510<br/>New York, NY 10166<br/>212-986-6770</p> <p><b>Taurus Impex</b><br/>c/o Haitex Resources<br/>208 Carrollton Park<br/>Suite 1207<br/>Carrollton, TX 75006<br/>214-241-8030</p> <p><b>Timeworks</b><br/>444 Lake Cook Rd.<br/>Deerfield, IL 60015<br/>312-948-9200</p> <p><b>WordPerfect</b><br/>288 West Center St.<br/>Orem, UT 84057<br/>801-225-5000</p> |
|--|--|



adequate, and all those thousands of dollars worth of hardware are *required* if you want good sound from one). There were some XE 8-bit computers and some 520 and 1040 ST computers playing games, but the Mega ST and the inexpensive laser printer Atari announced at Winter CES six months ago were nowhere in sight. Most of the activity centered around Atari's 2600 and 7200 game machines, which have enjoyed something of a renaissance in the last year. Also in the booth was the new XE Videogame machine, which is essentially the XE computer in a new case without a disk drive. Atari announced 40 new games for their videogame systems at CES! We have to wonder how much of their recent financial success is due to the rebirth of their videogaming systems rather than ST computer sales--they aren't saying much about the sales figures. Atari was handing out press kits laden with glossy photos of CEO Jack Tramiel and his son Sam, who is being groomed to take over the company when Jack retires. The question everyone is asking is, of course: When? And when he does retire, will Sam have the guts to play hardball like his dad has done? One thing's for sure, when it happens, the computer industry will be a lot duller.

Atari also had a separate booth featuring a new product line for Atari: calculators! It looks like Jack isn't going to let any of his past electronics marketing experience go to waste.

## BERKELEY SOFTWAREWORKS

Berkeley Softwareworks' display didn't show up in time for the show, so CES management relegated them to a room in the basement of McCormick North, but that didn't stop them from showing a couple of hot new GEOS titles. (The show-provided sign outside the door even said "Berkley Software"! By far the most impressive of the new titles is **geoPublish** (\$69.95), a complete desktop publishing package for the C64. It needs no additional components other than the geoWrite and geoPaint programs that come on the GEOS system disk, though additional packages and hardware (such as Writer's Workshop, the 1351 mouse, the 1764 RAM expander, etc.) will enhance the system. It allows free-form layout and formatting of geoWrite text and geoPaint graphics into documents that really do rival the Macintosh in quality. Flowing of text, editing and moving of graphics, and other functions rival those of the best desktop publishing packages. Berkeley has also released a long-awaited GEOS development package called **geoProgrammer**. It includes an assembler, linker, and debugger, with full support of all GEOS hooks. The 80-column C128 version of GEOS was also up and running; it's due out soon.

## ELECTRONIC ARTS

EA had a couple of square feet in the Soft-Kat booth, and used the space to demo some of their Amiga titles on an Amiga 2000. But most of the EA

# CES summer report

...continued from page 37



Atari booth with subLogic plane.

### Make Something Happen

You come out of a meeting and someone asks, "What happened?" And you answer, "Nothing." You sit in a legislative gallery and someone sits down beside you and asks, "What's happening?" And you say, "Nothing." Maybe that meeting room and that gallery should have had the same sign hanging their walls that-- so the story goes-- a college football coach posted in his teams' lockers: "Cause something to happen." He believed that if you didn't make

something happen with a good block, your runner would go nowhere-- and if you didn't tackle, the other team would run all over you. He sure caused something to happen. He won more than 300 games. Bear Bryant.

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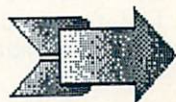
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Sample output from geoPublish for C64.





activity was in their suite at the Hyatt-Regency Hotel. Their most exciting new title is **Ferrari Formula One** (\$49.95), a racing simulator for the Amiga that delivers 220 mph hard-shaking action. Pit stops and car-building sequences are as realistic as the racing sequences. **Chuck Yeager's Advanced Flight Simulator** lets PC clone owners fly several different planes from different eras, and it will eventually be available for the C64. **Legacy of the Ancients** (\$29.95) for the 64 is already shipping, and if you like graphic adventuring in dark dungeons and fantastic forests, you will love the detail and realism of this game. EA was demoing **Instant Music** in a C64 version, and despite the fact that it is limited to 3 voices rather than 4 because of the SID chip, it sounded excellent! (It's just another example of how porting a program from the Amiga to the C64 makes the programmer work harder to preserve as much as possible of the original, resulting in a program that really pushes the 64 to new levels of quality.) You can build your own space stations with **EOS: Earth Orbit Stations** (\$34.95) for the C64. **Earl Weaver Baseball** (\$49.95) for the Amiga (soon for the C64) lets you manage the majors with the advice of "Baseball's Resident Genius" just a keystroke away. Also coming for the C64: **Dragons Lair I & II**, **Delta Patrol**, **Sanxion**, and **Amnesia**.

## EPYX

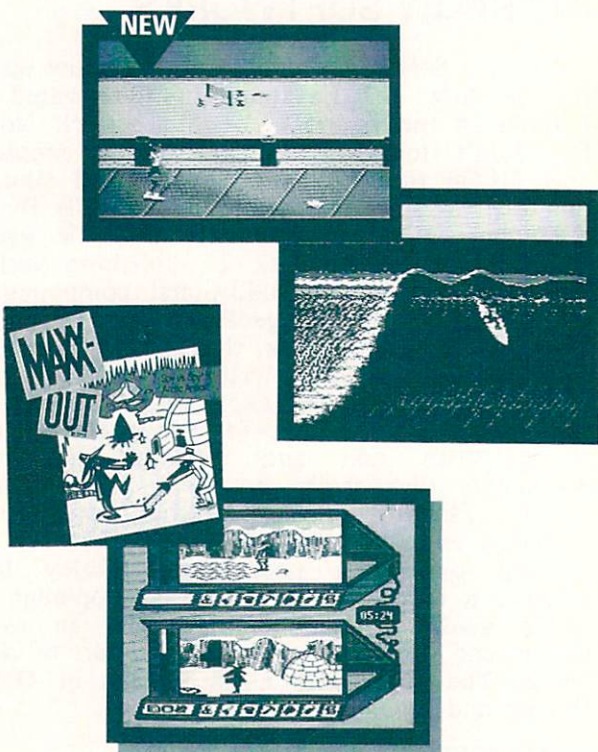
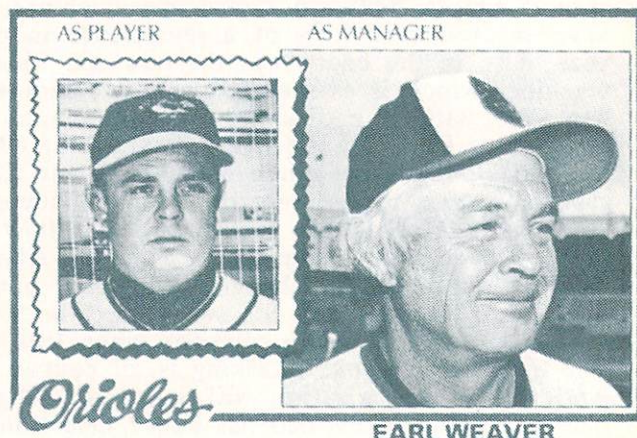
Epyx's large booth devoted a great deal of space to its new **California Games** title for the C64. It joins the Summer and Winter Games series, offering eight games peculiar to the Golden State, such as surfing, skateboarding, and Frisbee-tossing. Also coming: **Omnicon Conspiracy**, **Print Magic**, and a new line of games called **Maxx-Out!**, which will launch with **Rad Warrior**, **Boulder Dash Construction Kit**, and **Spy vs. Spy III: Arctic Antics**. All are for the 64. (Can you tell Epyx is located in California?)

## FIREBIRD

Firebird didn't have a booth at the show, but showed their wares in a hotel suite. They have committed a lot of their resources to the Atari ST. (We hear it's mainly because there is a dearth of software for the ST in Europe, and Firebird's commitment gives them a firm grip on the entire ST market there. Anyway, it explains why you will see many titles from Firebird on the ST first.) They have five new titles coming soon for the ST; two of them will be available for the Amiga and C64. One of them is a follow-up to **The Pawn**, only it will be harder and will feature improved graphics--no title yet. **Knight Orc** is a graphic adventure for the Amiga with three levels of difficulty and a 1000 word vocabulary. It turns the tables on the old dungeons theme---this time, you're the Orc! **Golden Path** is a new graphic adventure for the C64. There is also a full-featured drawing program coming for the C64 that has many Amiga-like features called **Advanced**

## CES summer report

...continued



*California Games & Spy vs. Spy III from Epyx.*



OCP Art Studio. Besides all that, Firebird is planning a new line of midpriced software which will feature 8 titles to start with, plus a line of budget-priced software (\$6.95-\$7.95) that will debut with 10 titles.

## INFOCOM

Infocom's party at the Field Museum of Natural History was a big hit again this year. Chicago's famed Second City comedy troupe presented a special tribute to computer gaming that was filled with inside jokes. The jazz under the dinosaur in the main hall was mellow and the hors d'oeuvres were excellent. As a sort of aside, they also introduced two new adventure games for the entire spectrum of personal computers, including the C64 and Amiga. **Stationfall** is the long-awaited sequel to **Planetfall**, and **The Lurking Horror** is an interactive horror story, based loosely on the work of H.P. Lovecraft.

## MASTERTRONIC

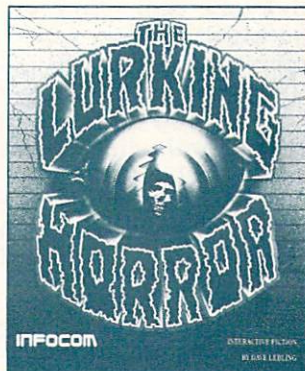
Mastertronic, the major purveyor of under-\$10 arcade-type videogame titles for the C64, had a conference room in the basement with several new C64 titles on display, including **Ant Attack** and **The Gates of Dawn**. But their big news was the introduction of arcade games based on the Amiga 500 into their Arcadia line of coin-op videogame machines. Displayed in the room was **Roadwars**, a futuristic road-race game involving high-tech balls. Upstairs on the main floor they were showing **BoulderDash**. Both of these machines use a standard A500 chassis modified with up to 1.5 megabytes of ROM containing the program code. The translation to home versions (which is underway) will mostly involve deciding what to trim back on to make the disk-loaded versions fit into 512K of RAM.

## MICROPROSE

At the MicroProse booth, **Pirates!** (\$39.95) was showing for the C64. The detail in this game is so involved, they are calling it an "adventure/simulation". Two additional titles coming soon for the C64 are **Project: Stealth Fighter**, a flight simulation program, and **Airborne Ranger**, which has your character parachuting into enemy territory on a combat mission. Perhaps the most fun to be had at the MicroProse booth was for those brave souls who tried out the WWII-vintage Link flight training simulator that MicroProse had outfitted to work with their **Gunship** helicopter simulation program. The cockpit of the trainer was equipped with a C128 and a PC-AT clone, and I hear the ride was wild!

## MINDSCAPE/THUNDER MOUNTAIN

Mindscape's big late-nite rock'n'roll party at a local club was impossible to get into unless you "knew somebody", and attendees rocked late into the night to the live music of several 50's rock idols.



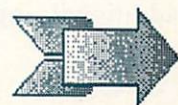
*Lurking Horror, new from Infocom.*



*Mastertronic's Ant Attack for C64*



*Gunship, without Link flight training simulator.*





Mindscape did take some time out from rockin' and rollin' to introduce a few new titles at the show, however. **Superstar Ice Hockey** (\$34.95) and **Into the Eagle's Nest** (\$29.95) are both new for the C64. Mindscape had a good-sized booth devoted to their new **Thunder Mountain** line of inexpensive imported software. Among the titles are **Paradroid** (first reviewed in INFO over a year ago as a hot British game, but just now available in the U.S.), **Top Gun** (based on the movie), and **Rock'n'Roll Trivia** (in five volumes!).

## PROGRESSIVE PERIPHERALS

Progressive had a beta version of **Vizawrite Desktop** (\$149.95) for the Amiga up and running—we hope it's out soon! With integration of graphics and text and other desktop-publishing features, plus the fact that it's written in 100% machine code (not C), this could be a hot product. They also had **Logistix** up and running, but, unfortunately, **Superbase Professional** is not ready to show. They were still demoing **Superbase Personal**.

## TIMEWORKS

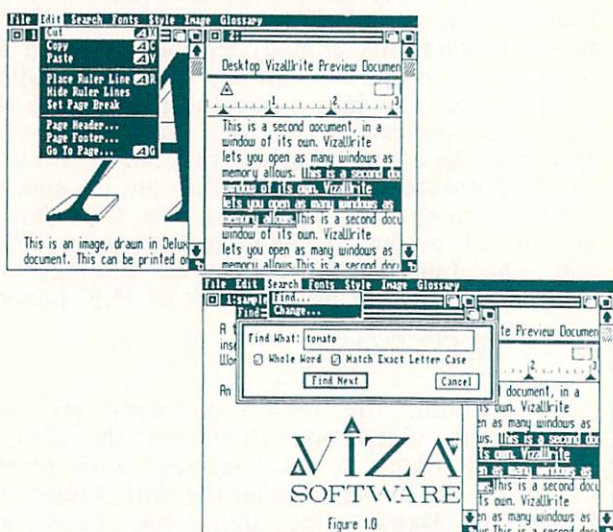
Though it was being shown on an Apple II, The **Timeworks Desktop Publisher** will be available later this year for the C64, and it looks great! It incorporates full page-layout capabilities, WYSIWYG wordprocessing, drawing, and graphics importing all in one package. The Apple II demos looked great, and the samples they were handing out looked really pro. Most of their other announcements seemed to indicate they are taking a stronger interest in the ST and PC clone markets.

## MISCELLANEOUS

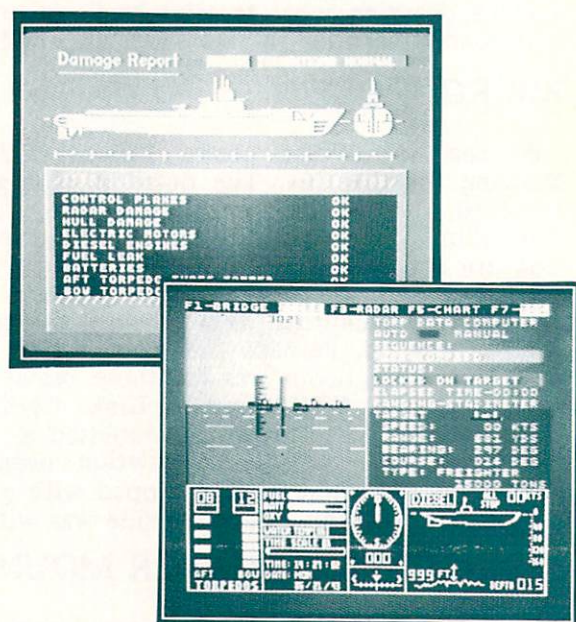
There were tons of Commodore products at the show, many more than we can mention here. Concept Development had a line of recipe software based on the PBS "Great Chefs of..." series. ActionSoft was still showing **Up Periscope**--**Thunderchopper** is not done yet. Xetec had the Lt. Kernal hard drive there. Sharedata was showing C64 games based on the TV game shows **Wheel of Fortune**, **Jeopardy**, and **Family Feud**. Selectronics of Minneapolis had a yoke controller to replace joysticks for driving and flying games. Psygnosis is following up **Bratallas** for the Amiga with a space-war game called **Terrorpods**. Phoenix Electronics announced 10, 20, and 40 meg hard drives for the Amiga. Passport Designs had their **Personal Musician** MIDI hardware/software package for the C64 at the show. Okidata, Star, and Epson all showed new dot-matrix printers, some with 24-pin heads, some with more speed, but nothing really revolutionary. Jagware was there with **Alien Fires** for the Amiga. Inkwell introed two new light pens, and announced v5.5 of **Flexidraw**, complete with additional input drivers for mouse, Koalapad, and

## CES summer report

...continued



*Vizawrite for Amiga from Progressive Peripherals.*



*ActionSoft's Up Periscope for C64.*



joystick. Infinity Software had **Shakespeare** desktop publishing and **Galileo** for the Amiga. Avalon Hill was quite proud of their NBA basketball simulation for the C64. California Dreams focused on gambling with **Vegas Craps**, **Vegas Gambler**, and **Club Backgammon** for the C64. Capcom is translating arcade games like **1942**, **Ghosts 'n Goblins**, and **Gunsmoke** for the 64. Suncom had their **Icontroller** stick-on keyboard joystick (\$19.95) on display, and it is a great little device. It sticks to your keyboard and gives you a nice, neat little controller for GEOS, wordprocessor cursor movement, and other applications. It even provides a pass-thru for another controller. (Benn and I already have them stuck to our C128s!)

Outside the Commodore area, Video Technology, the company which introduced the Laser 128 Apple IIc clone, this time had an IBM PC/XT clone called the **Laser Compact XT**. It's in the same compact case as the Laser 128 and should make a low-priced splash in the clone market.

Outside the computer area altogether, Casio introduced some interesting new MIDI guitars. These instruments are played like a regular guitar, and can produce regular electric guitar sounds, but they can also simultaneously control a MIDI instrument. It's quite an innovation, and should make MIDI as accessible for guitarists as it now is for keyboard players. Casio was also showing a new still video camera that they are hoping will replace standard 35mm cameras, at least in some applications. It can store 50 still frames on a super-mini 2" floppy disk. In the video arena, Benn became really enamored of Sony's new 8mm **Handycam Pro CCD-V9** camcorder; it rivals the finest 35mm cameras for speed and picture quality. Shutter speeds of up to 1/1000 of a second freeze motion, and the single-frame capability of the unit is totally without noisebars, for completely clear videos of fast action. The unit also features very low light-level operation. Looks like just the thing for computer animation or digitizing work. There was lots of digital audio equipment in evidence at CES, including digital audio tape. But nobody is planning on selling any tape units in the U.S. until the copy protection controversy is over.

## ON TO COMDEX!

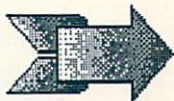
With the great wisdom (not to mention good ol' American competitive business spirit) often expressed in the computer industry, the organizers of the COMDEX show in Atlanta scheduled it for the same weekend as CES this year. While the rest of us stayed in Chicago to shop and sightsee, Benn flew on to COMDEX. Find his report on that show elsewhere in this issue.



## AWARDS

Like the Oscars or the Miss America Pageant, all software awards are basically a crock, especially at a show like CES where the organizers don't want to offend any of the paying exhibitors. But, for what it's worth, lots of your favorite and soon-to-be favorite games and programs won design awards at CES. Here's a list of the Commodore-related winners of CES Software Showcase Awards: *Activision*--*Aliens* (C64), *Championship Football* (Amiga), *Hacker II* (Amiga), *Portal* (Amiga); *Aegis*--*Sonix* (Amiga), *Draw Plus* (Amiga); *Avalon Hill*--*Guderian* (C64); *Berkeley Softworks*--*Writers Workshop* (C64); *Epyx*--*World Games* (C64), *Championship Wrestling* (C64); *Firebird*--*Talking Teacher* (C64), *Tracker* (C64); *Hearsay*--*Awua's Circus* (C64); *Infocom*--*Trinity* (Amiga); *Mindscape*--*Trailblazer* (C64), *Superstar Ice Hockey* (C64), *Uridium* (C64), *Sinbad* (Amiga); *MicroProse*--*Gunship* (C64), *Silent Service* (Amiga); *Progressive Peripherals*--*Superbase Personal* (Amiga); *Softsync*--*Trio 128* (C128); *SSI*--*Gemstone Healer* (C64); *Wargame Construction Set* (C64); *Thunder Mountain* (*Mindscape*)--*Paradroid* (C64); *Xetec*--*Fontmaster 128* (C128). Many other titles that are available for Commodore computers won awards, but on different machines. One interesting trend we spotted at CES is that much of the C64 software was actually shown on C128s. (Most of the C64 software awards were credited in the awards booklet as "shown on Commodore 128".) I suppose it's because the 128 just looks so much more like a "real" computer.

*CES exhibitor index on following page...*





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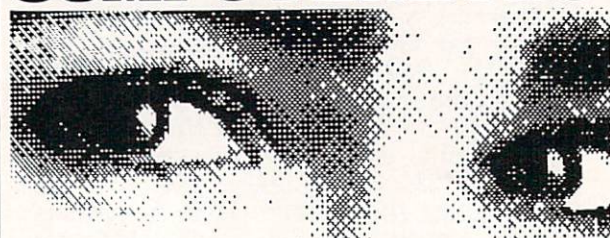
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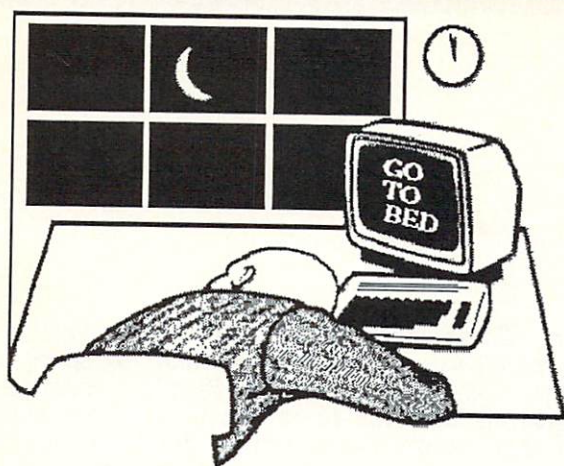
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...continued from page 14

honest reviews of products for our favorite computers from Commodore.

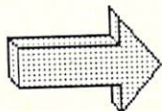
After a couple of issues, the companies that produce software and hardware started sending things to us for review. It didn't take me long to figure out that publishing your own magazine had some advantages! But it honestly didn't matter how we got products; whether free or purchased, we still reviewed them on an unbiased basis with an eye to quality, value, and usefulness in relation to the advertised purpose of the product. Anyone sending anything took a chance. To quote issue one again:

*"Authors willing to risk a review are invited to send in programs. Only your reviewer will see them. PET users are welcome to send guest reviews. Be honest and fair in them. Keep them short, or they'll be edited. If you have a program you want to sell, but can't see spending \$2500 for a full-page ad in BYTE, we'll review it for you. If your program isn't already advertised widely, we'll include your address or phone number in the review so folks can order your programs. (This isn't a come-on to build our library. We have too many programs already!)"*

Thanks in part to all our unselfish reviewers, who were never paid enough, and the advent of a flourishing Commodore market, each issue literally doubled in total pages. The trips back from the copy companies were getting to be a big chore. And worse yet, the issues were getting so big that they wouldn't fit in the envelopes our readers sent in! The cost of printing was getting out of hand; something obviously had to be done.

## INTO THE BIG TIME

We came up with the idea of the Whole PET Catalog. We wanted a kind of compendium of



Here are some of my most memorable issues of Midnite:

Number ONE: The first issue of Midnite. A four-page dot-matrix printout on fanfold paper. Originals are rare!

Number SEVEN: The last free issue to be sent in reader's envelopes.

Number EIGHT: The Whole PET Catalog, our first book.

Number NINE: The first regular issue with a price on the cover. Also the first issue to combine The Paper in the "article" section of Midnite.

Number SIXTEEN: This was actually a joint effort with Consumer Guide as a "Best of" review book for C64 and VIC-20 computers. We enclosed a double-sided single sheet.

Number SEVENTEEN: The famous Commodore artist Wayne Schmidt makes the cover of this issue with his "Pen and Ink" Doodle! picture.

Number EIGHTEEN: My wife makes the cover! (All you married guys know what that means!)

Number TWENTY-TWO: A rare find these days. Due to our low print run (our distributors deserted us) we actually reprinted this one once.

Number TWENTY-THREE: One of my personal favorites. This one was really late! But well worth it. Has the best software for all CBM machines throughout the issue.

Number TWENTY-FOUR: The first monthly issue of the Midnite (previously we were bi-monthly). Also the first issue of the new sixteen-page length at new low price of \$2.00.

Number TWENTY-FIVE: I was ashamed of the cover of this issue. Due to tight schedules, I put this one together by myself. No one but me can take credit for the looks of this one!

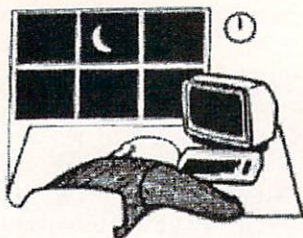
Number THIRTY-ONE: My all time favorite. Has the complete index to all Midnites prior to this issue, including number eight on. Short on text, but long on listings.

Number THIRTY-TWO: Our first break away from our normal covers. Instead of black on white, we had white on black and a joker at the keyboard.

Number FORTY-ONE: The LAST independent issue of Midnite before INFO continued the cause. It also has a reprint of issue number one.



...continued



Midnite's best printed material and additional new material. Bruce Beach, publisher of TPUG's official magazine **TORPET**, became involved with the printing and publishing (as well as some editing duties) of the book. Bruce and TPUG brought a lot of their material to the **Whole PET Catalog** with what was the first (I think) comprehensive listing of TPUG's vast collection of public domain software for Commodore computers. Jim and Ellen, Beach, and I edited the "best of" from the pages of the first seven issues of **Midnite**. This was in '82. The PET computer in all its varieties was just beginning to wane, and the VIC-20 was taking the personal computer market by storm, with a list price of \$299! The **Whole PET Catalog** became issue number eight and was the beginning of a new era for **Midnite**: it suddenly became a commercial commodity. Sales were brisk, though not spectacular. The **Catalog** did allow us to become a profit-making company, which we incorporated as Midnite Software, Inc.

Moving into the commercial sector opened our eyes to a whole new universe. *Net 30* and *Net Never* were new terms to us...and were suddenly very important. Another new-fangled (for us) term was *Profit*. Interesting conversations developed between Jim and myself concerning profit and loss reports, receivables, payables, the general ledger, and 'over 30'...and that didn't mean just our ages! It was an educational experience to say the least. Don't misunderstand me: we loved doing the **Midnite**. It was just a slight shock to me, the neophyte consumerist.

Issue Nine launched us into our new-found commercial magazine business. All our user group duties went to our mutual good friend Fran Donovan of Peoria. Also new and exciting with #9 was the acquisition of the old (dating back to around 1977) publication **The Paper**, published by Ralph Bressler. (The original name of the publication was **The PET Paper**, but in those days, as now, Commodore was touchy about people using their trademarked name.) Ralph's first editorial in the **Midnite** was titled "Keep The Spirit". The last two sentences said it all: "Come join with us in the thrill of helping

other Commodore users. Help make this magazine one which will continue to grow in quality and readership." People continued supporting us with reviews and articles, along with their subscription money. By issue ten we were becoming a well-formed magazine. But, unlike other, bigger magazines, controversy usually found its way into the **Midnite**. Whether it was a scathing review or a bit about Commodore's exploits, we seemed to draw attention.

## GROWING

And another thing happened, quietly and unintentionally: we began to learn a lot more about CBM computers and how to use them in many different ways. Later, that knowledge really paid off for Jim and me in ways neither of us had anticipated.

I was hired by Micro-Pace to help design and open a retail store exclusively for Commodore computers. (Let your imagination run wild with the prospect of someone giving you money to buy all the things you ever wanted for your computing pleasure. Needless to say, the money allotted for products diminished before I did.) Micro-Pace opened and became very successful.

Jim Strasma was already busy with his ministry duties, but he became the head of the CBM computer lab at Lincoln College, and later moved on to Western Illinois University. Neither of us had had any idea that the hobby we both labored over and loved so much would also become our new careers.

Why the history lesson? Maybe because I'm older; reminiscing is a vain thing. But there is one thing I'd like to leave you with: I'd like the new and not-so-new users to understand that with hard work, a purpose and a goal, and the help of dedicated friends, you can learn as much, or as little, as you want to about personal computers. Or, even more importantly, life.

Jim Oldfield Jr.  
Associate Editor, **INFO Magazine**.





# ATTENTION C-128 OWNERS!

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The Commodore C-128 is the most powerful and flexible 8-bit microcomputer yet released to the public. Unfortunately, there is little software available for its native 80-Column mode; and most of that is Productivity software using only the Text Character Display, not the true 80-Column Hi-Res Graphic Display which the machine is capable of producing.

Commodore originally intended the C-128's 8563 Video Display Chip to support 80-Columns only in Text mode, not Graphics. While standard C-128 Basic takes full advantage of the 40-Column graphics capability of the machine, there is almost nothing which allows the Basic programmer access to the 80-Column Graphics mode (Yes, there is an 80-Column Graphics mode!).

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The 64K Video RAM allows the full 640 x 200 screen with an 8 x 2 cell (we doubled it again, this time with a full screen!) Several such screens can reside in Video RAM simultaneously, each with different resolutions. You can view one screen while working on another and create Virtual Screens (larger than the displayable 640 x 200) in Video RAM.

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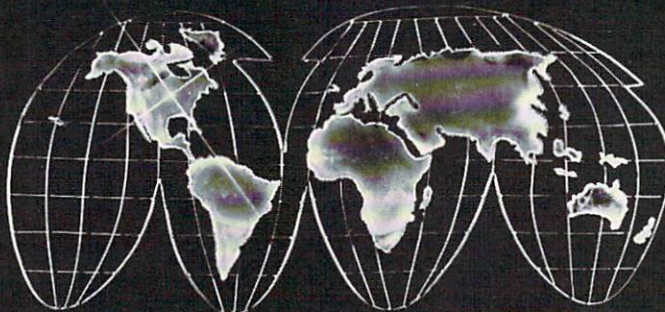
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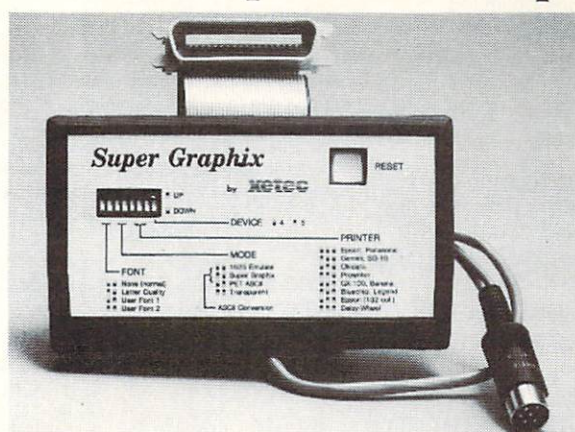
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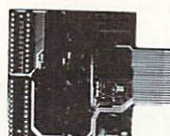
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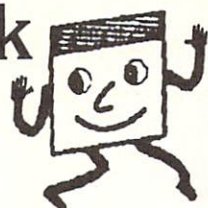
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jump  
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 multiply  
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 position  
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 jump if equal  
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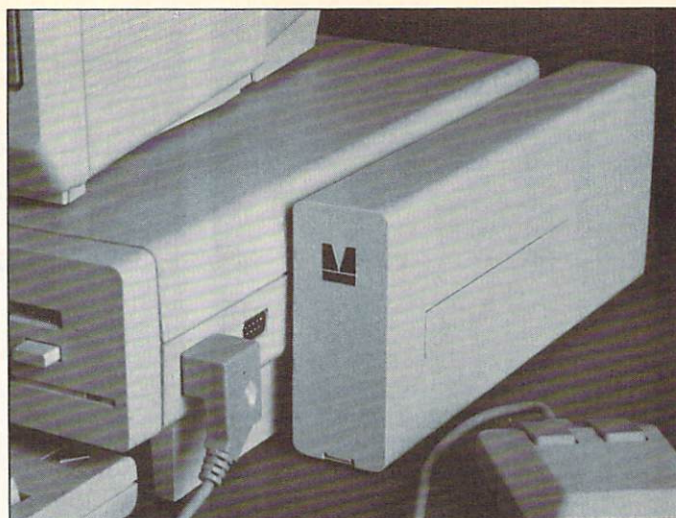
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real-time clock/calendar. A small piece of MicroBotics software in your WorkBench Startup-Sequence reads the clock and automatically sets the time and date in your Amiga. And the battery *is* included (we designed it to use an inexpensive, standard AAA battery which will last at least two years before needing replacement).

### THE FLOATING POINT FUNCTION:

If any one aspect most characterizes the Amiga it's *fast* graphics! Most graphic routines make heavy use of the Amiga Floating Point Library. Replacing this library with the one we give you with your MultiFunction Module and installing a separately purchased Motorola 68881 FPU chip in the socket provided by the Module will speed up these math operations from 5 to 40 times! And if you write your own software, you can directly address this chip for increased speed in integer arithmetic operations in addition to floating point math.

### THE PARITY CHECKING FUNCTION:

If you install an additional ninth RAM chip for every eight in your **StarBoard2**, then you can enable *parity checking*. Parity checking will alert you (with a bus-error message) in the event of any data corruption in **StarBoard2**'s memory space. So what good is it to know that your data's messed up if the hardware can't fix it for you? It will warn you against saving that data to disk and possibly destroying your database or your massive spreadsheet. The more memory you have in your system the more likely it is, statistically, that random errors will occur. Parity checking gives you some protection from this threat to your data residing in Fast RAM. Note that the Amiga's "chip" RAM cannot be parity checked.

### THE IMMORTAL MEMORY DISK FUNCTION (STICKY-DISK):

When you've got a lot of RAM, you can make nice big RAM-Disks and speed up your Amiga's operations a lot! But there's one bad thing about RAM-Disks: they go away when you re-boot your machine. Sticky-Disk solves that problem for you. It turns all of the memory space inside a single **StarBoard2**

into a Memory Disk that will survive a warm-reboot! When your Amiga attempts to grab a **StarBoard2** in Sticky-Disk mode, a hardware signal prevents the system from acquiring the **StarBoard2** as FastRAM (and thereby erasing your files)—instead it is re-recognized as a Memory Disk and its contents are preserved intact. If you want to work rapidly with large files of data that are being constantly updated (such as when developing software) you can appreciate the Sticky-Disk!

## Fast RAM—no waiting!

**StarBoard2** is a *totally* engineered product. It is a ZERO WAIT-STATE design, auto-configuring under AmigaDOS 1.2 as Fast RAM. Since AmigaDOS 1.1 doesn't support autoconfiguration, we also give you the software to configure memory in 1.1.

Any applications software which "looks" for Fast RAM will "find" **StarBoard2**. And you'll find that your applications run more efficiently due to **StarBoard2** on the bus.

## A passing bus? Indeed!

What good is an Expansion Bus if it hits a dead end, as with some memory cards? Not much, we think—that's why we carefully and compatibly passed through the bus so you could attach other devices onto your Amiga (including another **StarBoard2**, of course!).

## The sum of the parts...

A really nice feature of the **StarBoard2** system is that you can buy exactly what you need now without closing off your options for future expansion. You can even buy a 0k **StarBoard2** (with a one megabyte capacity) and populate it with your own RAM (commonly available 256k by 1 by 150ns memory chips). When you add **StarBoard2** to your Amiga you have a powerful hardware combination, superior to any single-user micro on the market. See your Authorized Amiga Dealer today and ask for **StarBoard2**

### SUGGESTED RETAIL PRICING:

StarBoard2, 0k (1 meg space):	\$349
StarBoard2, 0k (2 meg space):	\$395
StarBoard2, 512k (1 meg space):	\$495
StarBoard2, 1 meg (1 meg space):	\$595
StarBoard2, 2 megs installed:	\$879
StarBoard2, 2 megs & MultiFunction:	\$959
Upper Deck, 0k (1 meg space):	\$ 99
MultiFunction Module:	\$ 99
also available:	
Standard 256k memory card:	\$129
MAS-Drive20, 20 meg harddisk:	\$1495
MouseTime, mouseport clock:	\$ 50



**MicroBotics, Inc.**

811 Alpha Drive, Suite 335, Richardson, Texas 75081 / (214) 437-5330

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# CAULDRON

Broderbund  
17 Paul Dr.  
San Rafael CA 94903

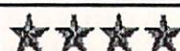
INFO-rated



This best-selling British import is not one but *two* games. In Cauldron I, you are a broomstick-flying witch opposing the PumpKing. In Cauldron II, the tables are turned, and you are a pumpkin guardian seeking vengeance against the witch. Both games are of the ropes-and-ladders genre, with lots of mean creatures and fun obstacles. The music and the graphics are excellent, and the gameplay is fun. Exploring all the rooms in Cauldron should keep you pleasantly occupied for many nights. -MB

Legacy of the Ancients  
Electronic Arts  
1820 Gateway Drive  
San Mateo, CA 94404

INFO-rated



While this graphic adventure game looks and acts pretty familiar, it's near the top of the genre. I would describe *Legacy* as a three-way cross between *Ultima*, *Bard's Tale*, and *FaeryTale* with its town and terrain graphics, 3D maze sequences, and split graphics/text windows. A menu-style command list makes entering options painless, the graphics are very attractive, and not only hit-strength, but food and funds must be maintained in ample supply. The museum maze with its coin-op view-screens, puzzles, and useable displays elevates *Legacy* above the others. -BD

# YAK'S PROGRESS

Eurosoft  
114 East Ave.  
Norwalk CT 06851

INFO-rated



In the early days of computer gaming, you didn't need long, boring software manuals--you just picked up a joystick and started blasting! If you have a nostalgia for those days, you'll love this package of 8 classic games from Llamasoft. Included are *Attack of the Mutant Camels*, *Hover Bover* (my personal favorite), *Matrix* (shown), *Laser Zone*, *Metagalactic Llamas*, *Ancipital*, and more. The music is great, the action fast and furious, the humor refreshing, and the value undeniable. -MB

# WHEEL OF FORTUNE

ShareData  
7400 W. Detroit C-170  
Chandler AZ 85226

INFO-rated



Fans of the TV game show have been clamoring for a computer version of *Wheel of Fortune* for quite awhile. Well, here it is. This game doesn't have much in the way of bells and whistles, but at least it's cheap. The music is tinny, the graphics average, and the user interface just okay, but the game plays well and even has a "Vanna" clone turning letters and clapping as you spin the wheel. There's no flash to this game, but I don't think *Wheel of Fortune* fans will be disappointed. -MB

# CASINO CRAPS

Casino Software  
505 Lewis  
Rocky Springs, WY 82901

INFO-rated



Casino craps is a good aid in familiarizing would-be crap-shooters with the game in a variety of locations including Vegas Strip, Downtown Vegas, Reno, and Atlantic City (all with the attendant rule variations). Presuming that the random number and payoff routines are accurate, it will also demonstrate which bets will part the player from his/her money the fastest. On the down-side, the character graphics give this title an amateurish look, and the action is pretty pokey. Reasonably entertaining, and (with no competition) it is the only (craps) game in town. -BD

# VEGAS GAMBLER

Logical Design Works  
780 Montague Expwy.  
San Jose, CA 95131

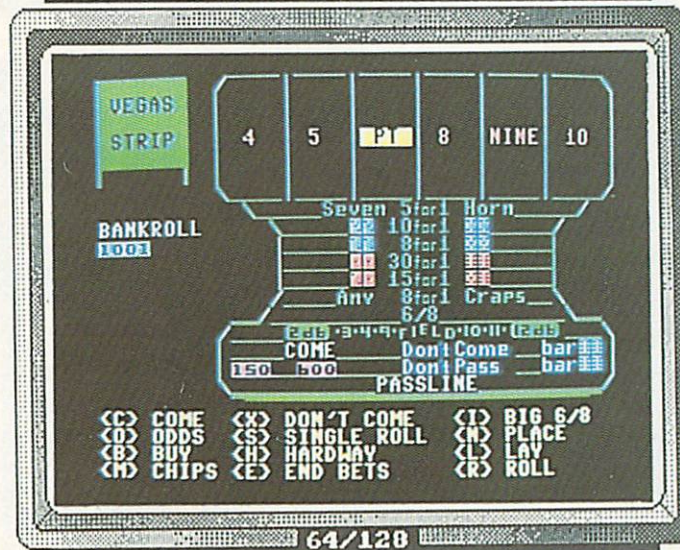
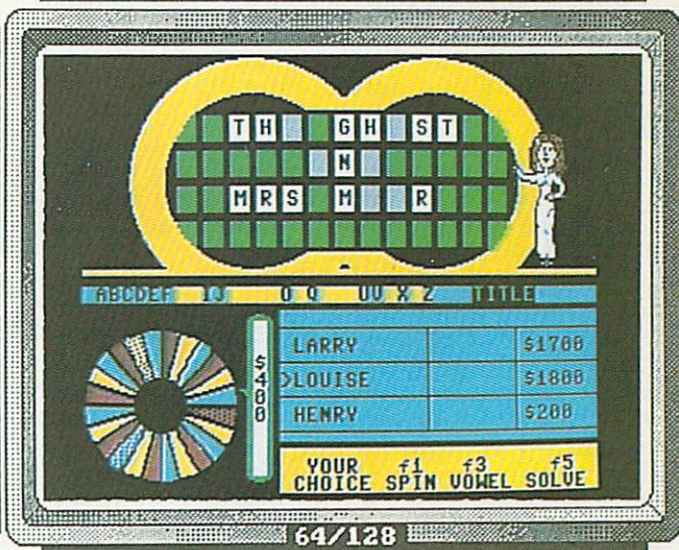
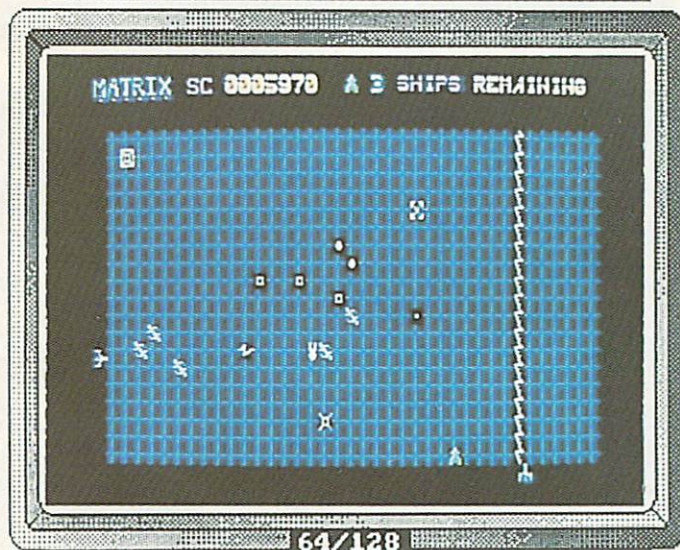
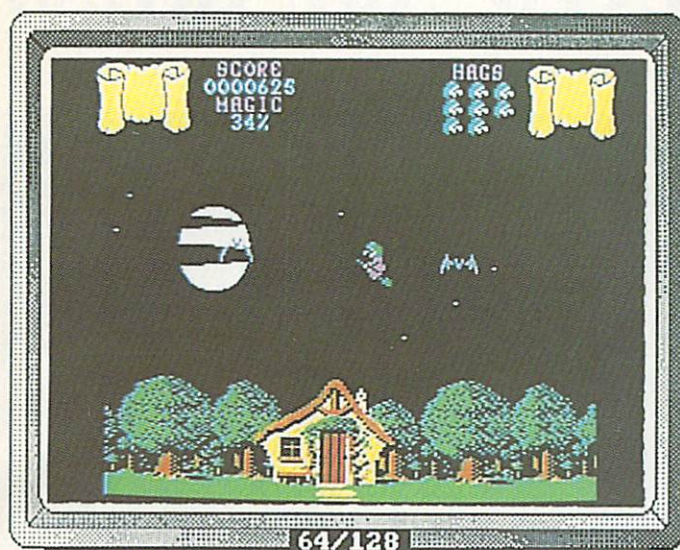
INFO-rated



Like several other currently available casino simulations, *Vegas Gambler* includes a collection of four games- Slot Machine, Blackjack, Video Poker, and Roulette. The user interface is unusual in that it requires all manipulations to be performed via a joystick-driven pointer. With a mouse, dragging coins and chips around one at a time might be enjoyably realistic, but with a digital joystick, it is a mild form of torture (and if you miss the coin slot by a hair, the coin drops off the screen!) Otherwise, the games are pretty standard with fairly decent hires screens (tho some bad color sets). -BD



# THE GALLERY







# DOUG'S MATH AQUARIUM

...continued from page 17

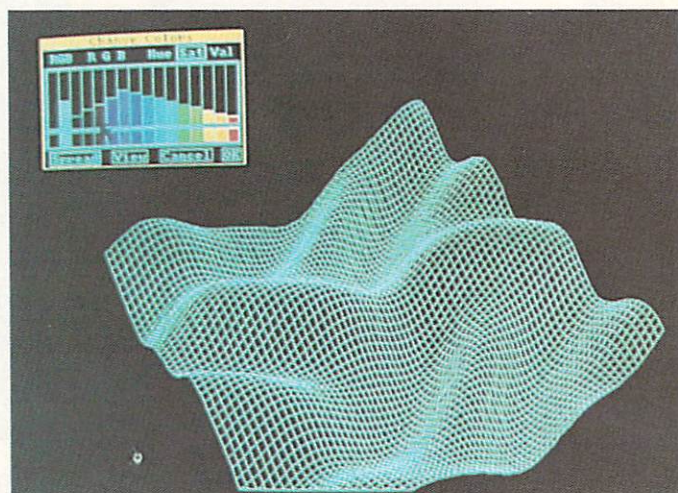
Doug's Math Aquarium (\$79.95 from Seven Seas Software) evolved out of the plethora of public domain Mandelbrot set generation programs for the Amiga. With varying degrees of versatility and speed, these programs plot colorful patterns based on equations first postulated by Benoit Mandelbrot, an IBM Fellow and mathematician who is a pioneer in the field of fractal mathematics. The plots of his equations are beautiful and compelling, with ever-higher degrees of intricacy and detail revealed at every level of magnification.

Doug's Math Aquarium goes a step further, allowing you to define your own equations for plotting. The system supports trigonometric functions, conditionals, logs, logical functions, and just about anything else you can think of. With up to five lines of formula space, the calculations can get pretty complex.

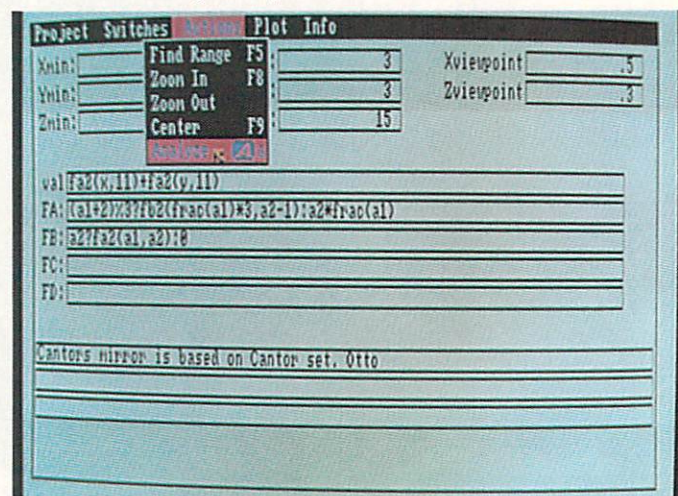
You can plot your functions in full-color contour mode, where the color plotted represents a value, or in 3D perspective in wireframe mode. Each has its advantages, and each offers some insights into the personality of the function you're plotting. Either way, pull-down menus and function key selections give you full control over the degree of detail in the plot, the maximum and minimum values plotted, the display mode (hires, lores, and interlace), and even the colors used. The color selector is one of the best we've seen, letting you define ranges with a quick and intuitive swipe of the mouse. Additional functions like an overplot mode and color cycling let you really get some great effects.

You can save your work in a space-saving formula format, or as IFF picture files which can be loaded into your favorite paint program for further work.

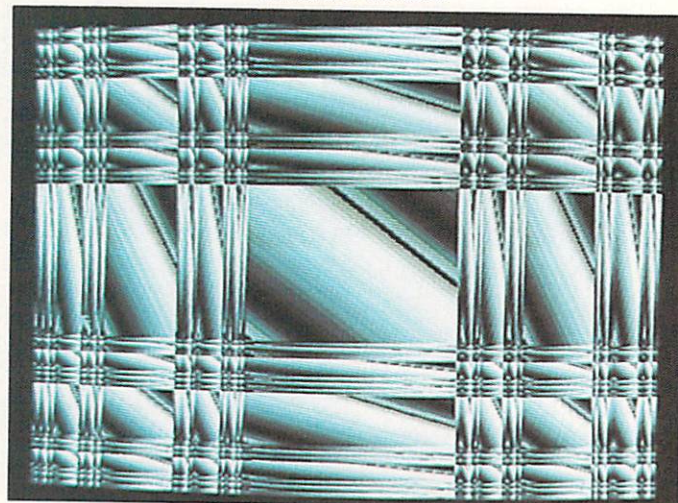
Though Doug's Math Aquarium is ostensibly an entertainment program, we see the potential to use it for more serious work. The visual representation of complex mathematical ideas has long been recognized as a means to greater understanding of difficult concepts; this package plots real equations, so it could provide insights into mathematical equations for mathematicians, physics problems for physicists, and even engineering problems for engineers. It will be interesting to see if anyone puts DMA to work in this manner. In the meantime, we'll just sit back and enjoy the wonderful patterns it makes!



Wireframe plot and color controls



Control screen



Cantors mirror in contour mode





## EF/X

More and more video professionals are finding out that the Amiga is the first personal computer with the off-the-shelf power to produce truly professional-quality video. With the right tools, the Amiga can take over many traditional broadcast-video chores like weathermap generation, teleprompting, and production of custom animated graphics title screens. E/FX (from ACS) forms the core of a TV station management system that is geared to just those tasks.

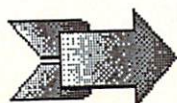
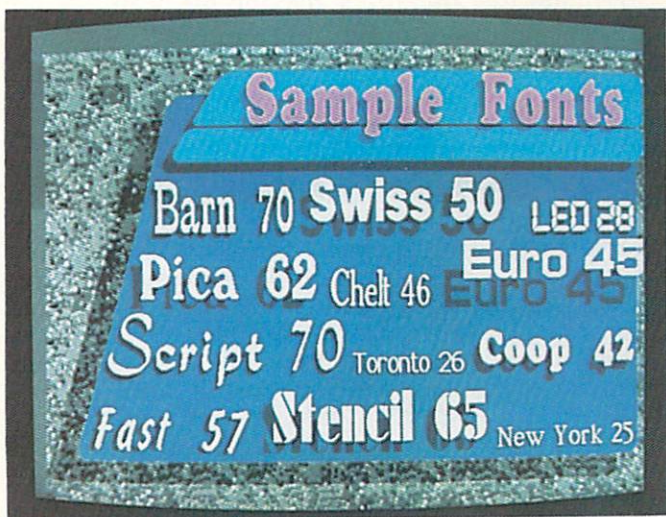
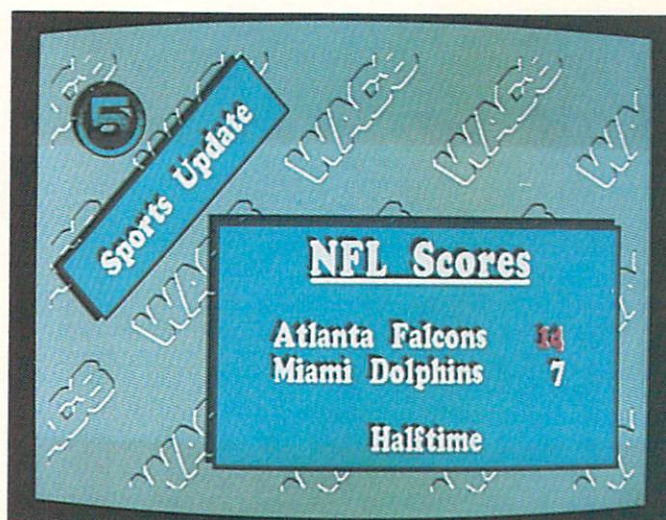
E/FX itself is the storyboard editor/controller for a series of programs that also includes a custom character generator and a weather graphics package. With E/FX, you combine IFF screens, brushes, and fonts to create broadcast-quality animation sequences. The package uses 672x444 full-screen, edge-to-edge resolution and double-buffered animation techniques for extremely smooth, high-resolution quality.

E/FX features over 40 professional wipes like venetian blinds and spirals, plus fades and color cycling effects. Brush objects can be loaded and animated on-screen, moving along defined paths and appearing and disappearing using any of a wide variety of transition effects. Though each screen is limited to using 32 of the Amiga's 4096 colors, each screen can have its own 32-color palette.

The number of controls and editing commands is impressive, with full control over timing, sequence, colors, color cycling, and other effects. Portions of a storyboard can be edited or moved at will. Up to 12 separate "twines" (independent sequences) can be combined in a storyboard. The whole system uses the Amiga's pull-down menus and pop-up requesters to full advantage.

The demo disk we received showed some really impressive effects, with clouds moving over weathermaps, titles scrolling by over professional-looking station ID slides, etc.

Amiga-based packages like E/FX deliver graphics capabilities that were previously only available in professional systems costing tens of thousands of dollars. With results that look this good, we imagine we'll be seeing lots of Amiga graphics on local cable and broadcast TV stations in the near future. (We are pretty sure we've already seen some--the stations aren't telling!)







# XCAD & OTHERS

...continued

## XCAD

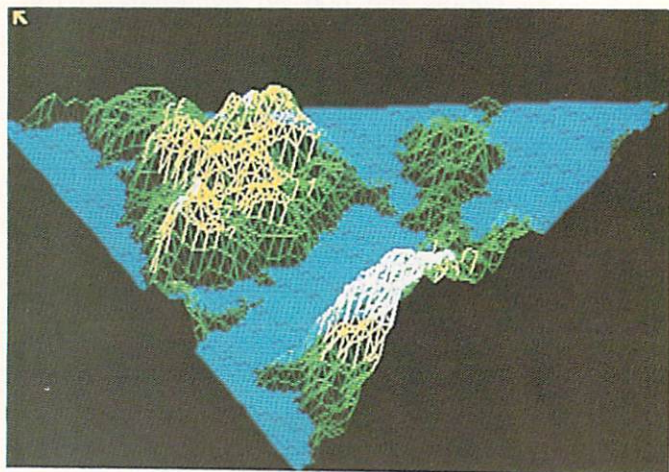
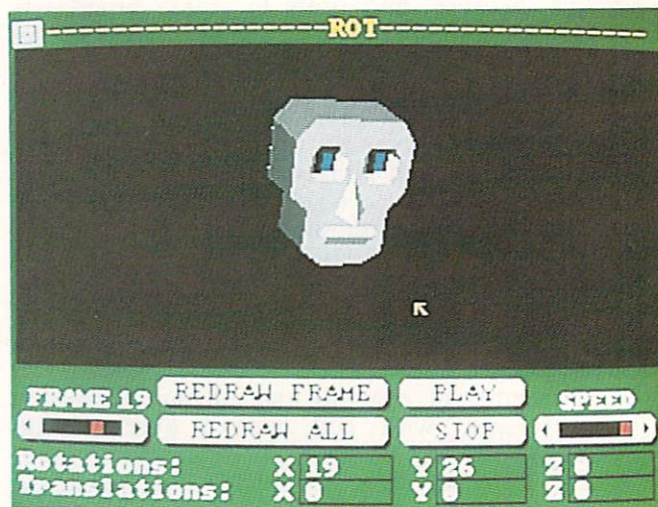
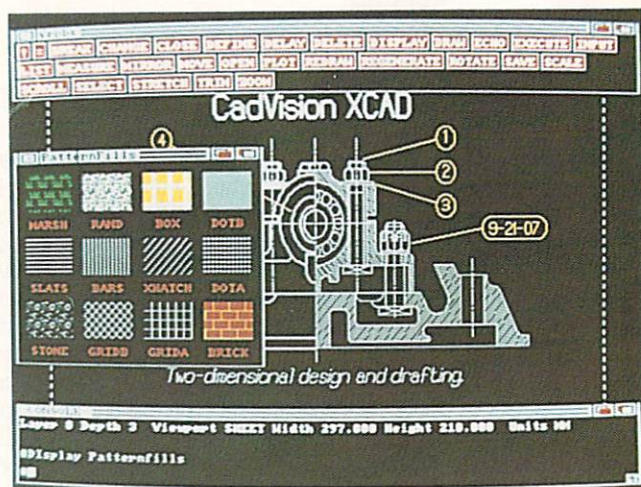
XCAD from TAURUS IMPEX in England has all the earmarks of being the first fully 'PRO' level CAD system for the Amiga. It is a fast, hires, 2D package which is intended to serve equally well as a tool for mechanical, architectural, and electronic/electrical designers. XCAD takes advantage of the custom graphics hardware of the Amiga to outperform such big names as AutoCAD running on IBMs by factors of as much as 100 times in certain operations (like drawing circles etc). XCAD also has the ability to import drawing files from AutoCAD, Aegis' Draw Plus, and other CAD programs. Watch for a full review in a future issue.

## ROT

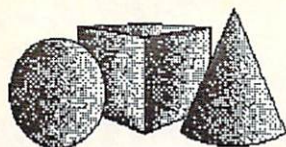
There are some fantastic PD graphics programs for the Amiga, too. If you want to experiment with 3D animation, C. French's ROT is a great place to start. It lets you create 32-color 3D objects using a three-view wireframe editor, then animate them in a half-screen window. The animation action can run up to 24 frames long, with variable speed, 3-axis movement, and optional repeat/reverse-at-end. Though ROT does not do automatic shading, you can select shades that look very realistic. The wireframe editor is limited to 98 points comprising 98 polygons, but that is enough for shapes of surprising complexity. The ROT.arc file includes examples like this robot shaking his head.

## FSCAPE PLUS

Mike Steed's FScapePlus is another excellent example of the great PD graphics programs out there. This AmigaBASIC program generates 3D fractal landscapes and displays them in wireframe in various degrees of detail. A separate control screen provides sliders for adjusting scaling, random number seeding, detail, ruggedness, and point of view. It is surprisingly fast for a BASIC program, and the results are great: the mountaintops are even capped with snow and the "sea" is blue! Just as PD demos helped to inspire commercial ray-tracing programs, we think that Mike's program throws out the challenge for developers to come up with commercial fractal landscape packages.







## 8-BIT GRAPHICS

Most of the activity in graphics right now centers around the Amiga, but there are some exciting developments for the C64/C128, too!

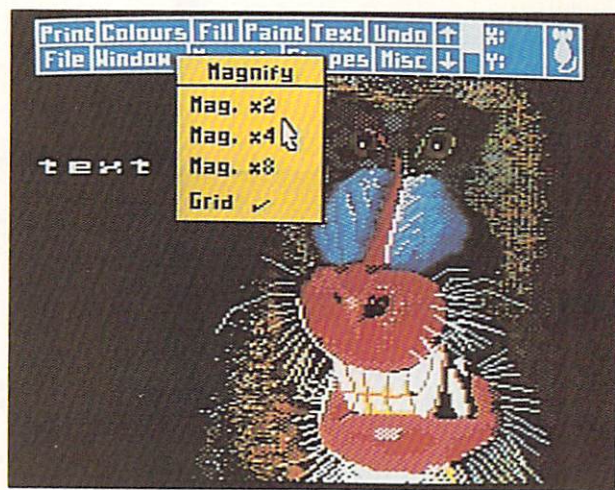
**BASIC 8.0** for the C128 from Patech Software (\$39.95) adds dozens of 80-column mode 3D hires graphics commands to BASIC, with up to 640x192 resolution in 16 colors. It includes an 80-column drawing program and a graphic operating system.

**Firebird's \$39.95 Advanced OCP Art Studio** gives the C64 many Amiga-like capabilities. It draws with 16 pens, 8 user-definable brushes, and 16 spray patterns; draws lines and geometric shapes elastically; cuts & pastes with sizing, flipping, and rotation; uses color stencils; and works in hires or multicolor modes. Besides all that, it's fast! It's another example of how far programmers can stretch the C64 once they begin to emulate the Amiga's features.

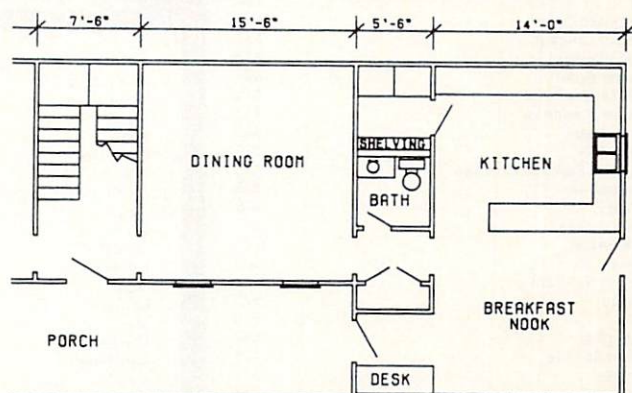
For animation, one of the fastest and easiest-to-use systems we've seen for the C64 is **Moving Pictures** (\$29.95) from Norland. It provides a set of animation extensions to BASIC. You draw your animation cels with any hires C64 drawing program, then use the added BASIC commands to produce your animated movies, with full control over the speed, color, and position of the animated pictures.

**Home Designer** for the C128 from Briwall (\$49.95) is much more than just a home designer. It is a full object-oriented CAD system with five working layers, mouse support, library figures, and many more features, including near-plotter-quality output from dot-matrix printers.

There are new graphics utilities available all the time, too. A new public domain program called **MacView64** lets you download MacPaint pictures and convert them to GEOS format, opening the whole world of Macintosh graphics to the 64 owner. **Micro-Ads Video** (\$14.95) lets you produce near-pro video title screens using **Print Shop** graphics, and colorizes them for slideshow displays or titling home videos. **Inkwell Systems' Graphics Integrator II** converts almost any known C64 graphic screen or print program graphic to any other format; it lets you integrate graphics into **Paperclip** documents; and it includes an extremely nice slideshow utility program with professional-quality wipes like *sparkle* and *shutter*, all for \$29.95. With programs like these being released all the time, graphics on the C64 and C128 will be exciting for quite a while!



*Advanced OCP Art Studio for the C64.*



*Home Designer for the C128 from Briwall.*

## GRAPHICS VENDORS

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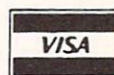
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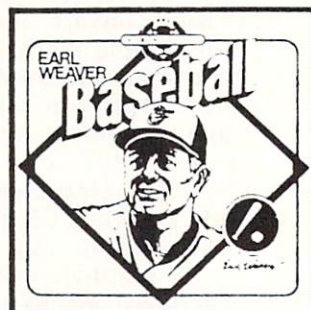
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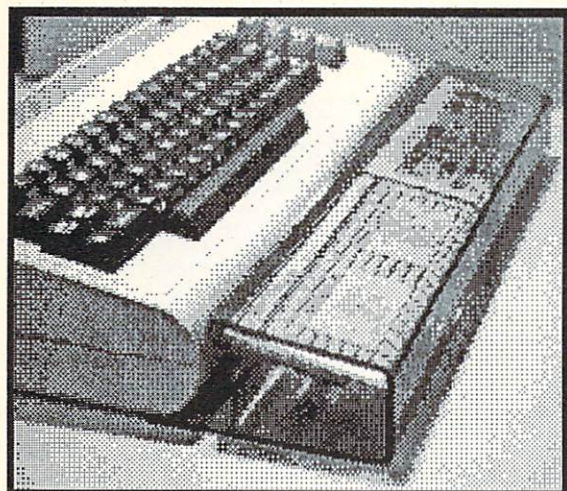


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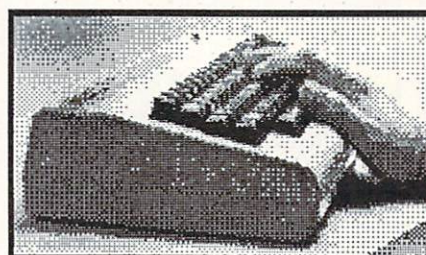


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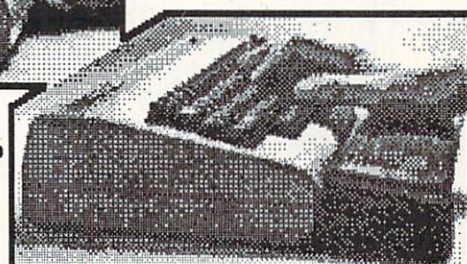


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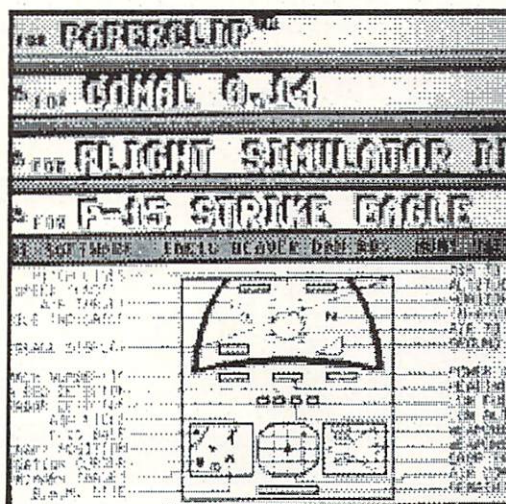


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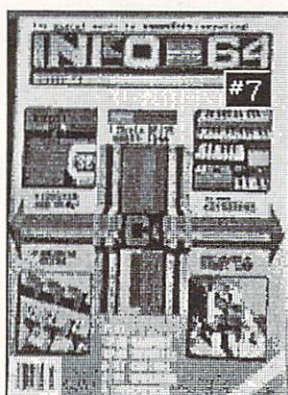
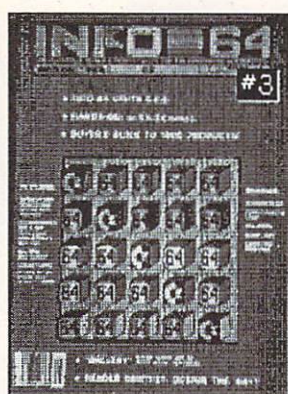
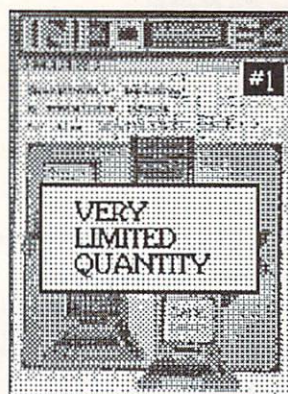
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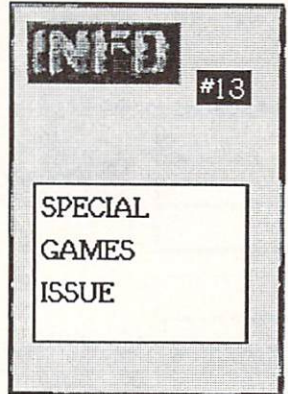
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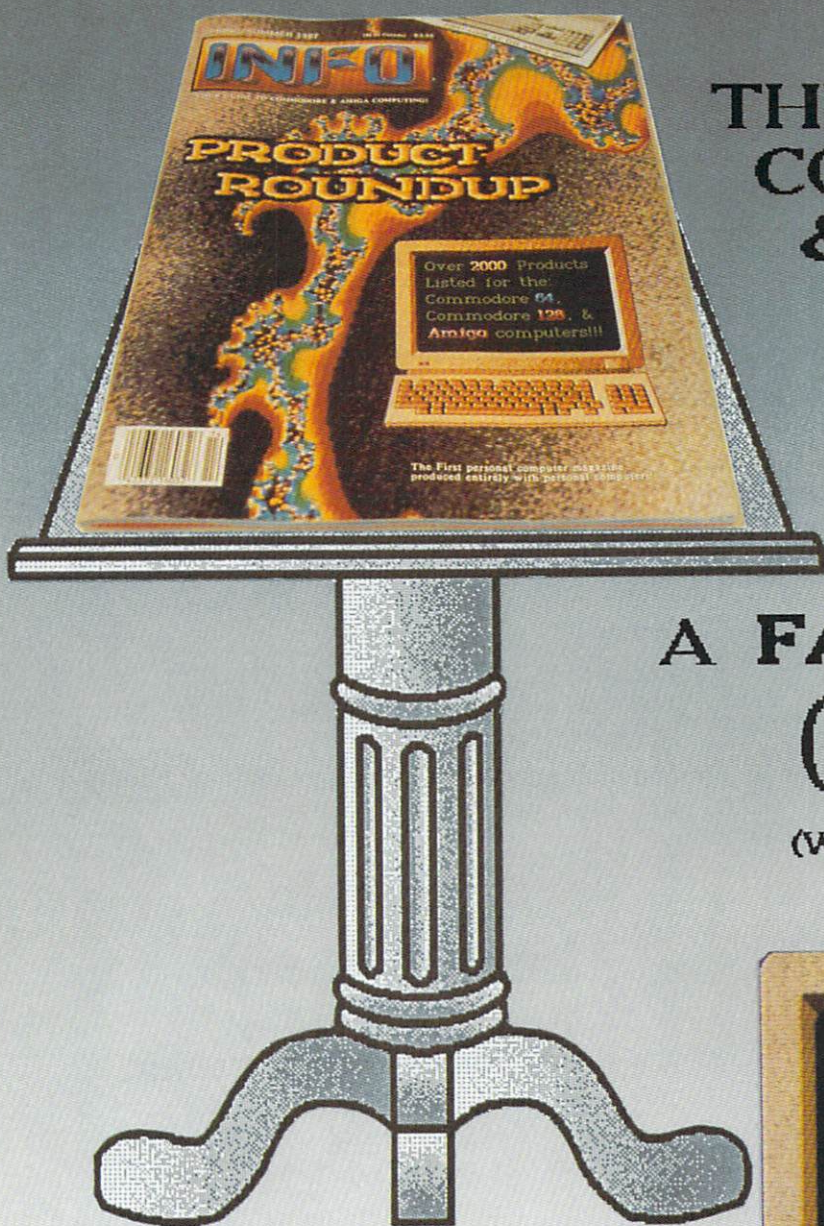
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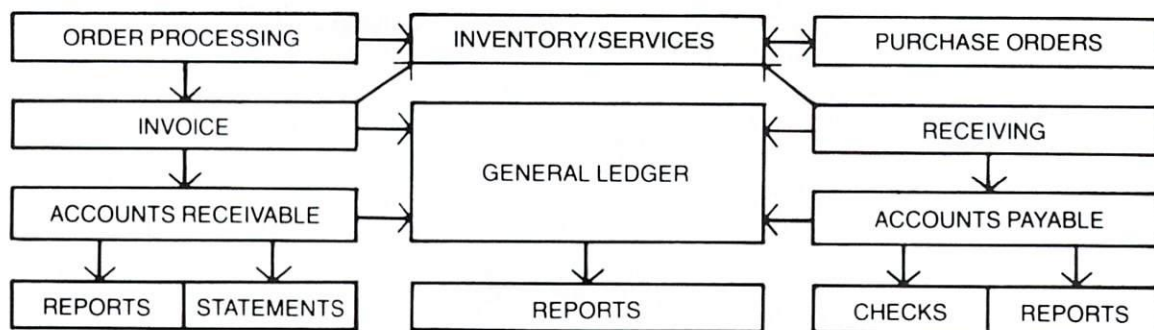
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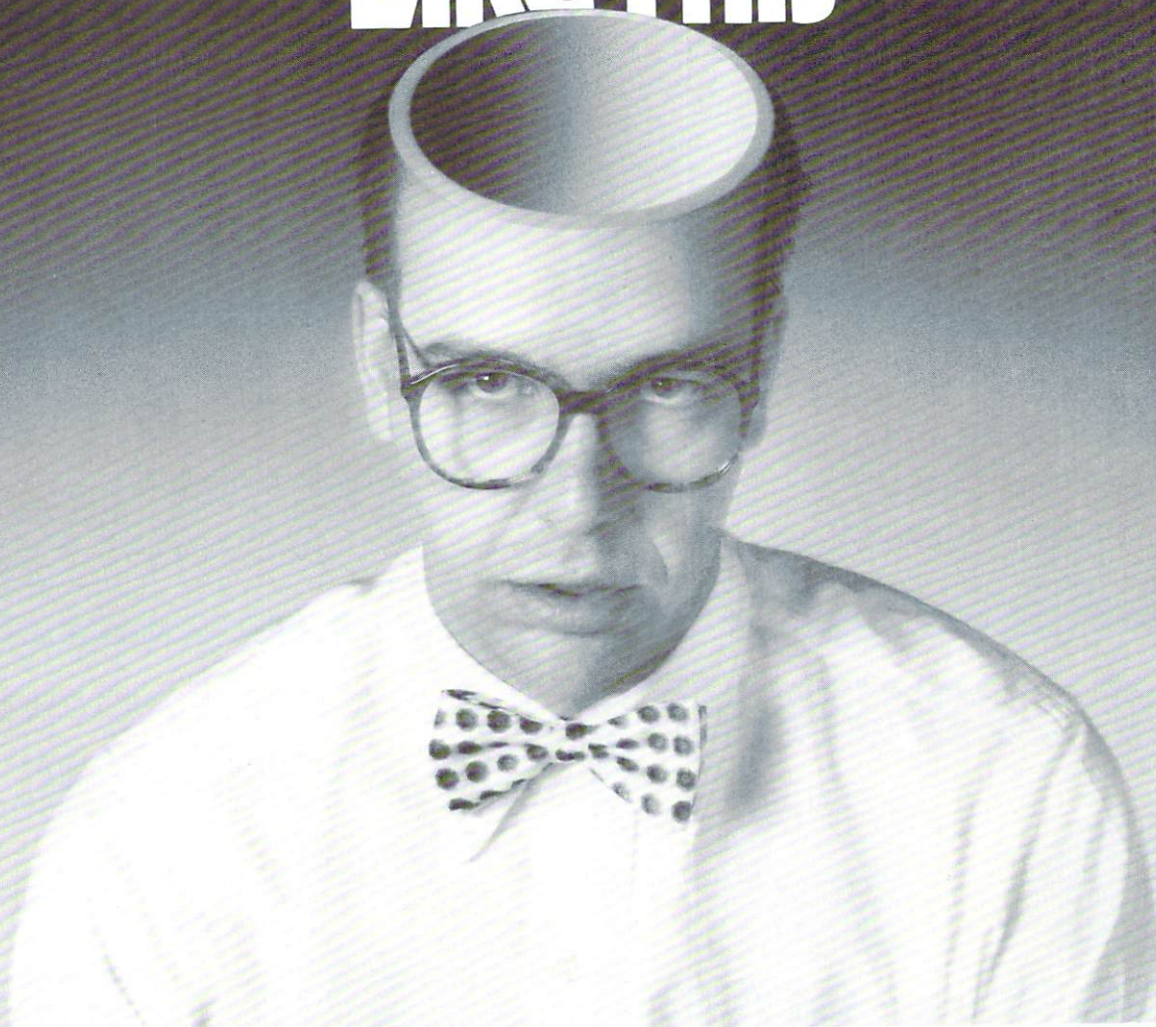
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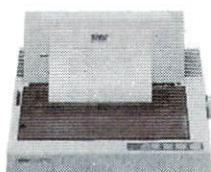


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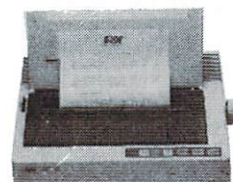
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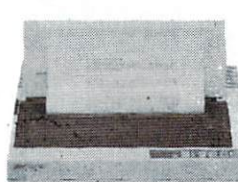
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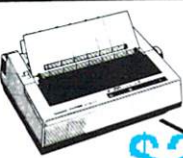


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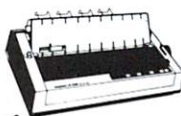
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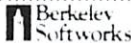
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WE GENERALLY TRY TO PRINT A MIXTURE OF 8-BIT AND AMIGA CARDS, BUT LAST ISSUE WE DEVOTED ALL 3 CARDS TO AMIGA BASIC, SO THIS TIME, JUST TO EVEN THE SCORE, WE'RE DEDICATING ALL 3 CARDS TO C64/C128 PROGRAMS.

HERE'S YOUR FREE SET OF INFO ERG-CARDS! CAREFULLY REMOVE THIS CENTERFOLD FROM THE STAPLES AND CUT APART HORIZONTALLY ALONG THE COLORED BORDERS. USE THE BLANK BACKSIDES TO MAKE YOUR OWN REFERENCE CARDS.

## ERG CARD™ FOR USE WITH:

### BASIC 8.0 PART 1 copyright 1986 WALRUSOFT

Page	Command	Function
65	@ANGLE ,Xangle,Yangle,Zangle, Sequence(0-5)	Change View
66	@ARC ,Xcenter,Ycenter,Zcenter, Xradius,Yradius,StartAngle, EndAngle,Increment(1-180), Thickness(+),Subtend(0-1)	Draw Arc
67	@BOX ,X1,Y1,Z1,X2,Y2,Z2, ShearDir(0-2),ShearValue(+), Thickness(+)	Draw Box
68	@BRUSHPATRN ,Brush#, Pattern#(0-191),Buffer#(0-9), Address	Brush to Patrn
69	@BUFFER ,Buffer#(0-9), Address(+),Size(+)	Define Buffer
70	@CBRUSH ,Structure#(0-191), Reverse(0-1),Reflect(0-1), Flip(0-1)	Change Brush
71	@CHAR ,Structure#(0-191), Column(0-255),Row(0-819), Height(1-16),Width(0-16), Direction(0-7),String	Output String
73	@CIRCLE ,Xcenter,Ycenter,Zcenter, Radius(+),Thickness(+)	Draw Circle
74	@CLEAR ,FillValue(0-255) [,BackColor(0-150), ForeColor(0-15)]	Clear Screen
75	@COLOR ,BackColor(0-15), ForeColor(0-15),BorderColor(0-15)	Define Colors

76	@COPY ,SourceScreen(0-7), Xstart(0-XMax),Ystart(0-YMax), DX,DY,DesScreen(0-7),EX,EY	Copy Area
77	@CYLNDR ,X,Y,Radius(1-255), HalfLen(1-128),View(0-1)	Draw Cylinder
78	@DIR\$	Read Directory
79	@DISPLAY ,Screen#(0-7), Device#(8-11),Drawmode(0-3), Filename\$[,X,Y]	Recall Scrn.Brsh
80	@DOT ,X,Y,Z	Plot Pixel
81	@DRWMODA ,Jam(0-2), InverseVideo(0-1),Complement(0-1), Undraw(0-1),Pattern(0-1), Merge(0-1),Clip(0-1)	Define Mode
81	@DRWMODB ,Zview(0-1), UnplotLast(0-1),UnplotVertex(0-1)	Define Mode
82	@FETCH ,Structure#(0-191),X,Y, DrawMode(0-3)	Recall Area
83	@FLASH ,X(0-639),Y(0-Ymax),DX,DY, Number(1-255)[,Fast(0-1)]	Flash Area
84	@FONT ,Charset#(0-1), Structure#(0-191)	Load Font
85	@GROW ,Xstep(+),Ystep(+), Zstep(+)	Set Step Value
86	@HCOPY ,SecAddress,Height(1-4), Density(1-7),Rotation(0-1)	Print Hardcopy
87	@LINE ,X1,Y1,Z1,X2,Y2,Z2, Thickness(+)	Draw Line
88	@LOGO ,Structure#(0-191)	Draw Logo
89	@LSTRUCT ,Structure#(0-191), Device#(8-11),Buffer#(0-9), Address(+),Filename\$	Load Structure
90	@MODE ,Mode#(0-3)[,Interlace(0-1)]	Specify Screen
92	@MOUSE ,(0-2),Device(0-1), X(0-XMax),Y(0-YMax) [,JoystickInc(1-255)]	Read Mouse/Joy

## ERG CARD™ FOR USE WITH:

### BASIC 8.0 PART 2

93	@ORIGIN ,Xcenter(+),Ycenter(+), Zcenter(+),VanishX(+), VanishY(+),VanishZ(+)	Set Origin
94	@PAINT ,X(0-XMax),Y(0-YMax), Bank#(0-1),Address(+),Size(+)	Paint Area
95	@PATTERN ,Structure#(0-191)	Set Pattern
96	@PIXEL ,X,Y,Mode(0-1)	Get Color
97	@PTR ,(0-2),X,Y,Def#(0-15) [,Height(1-16)]	Plot Pointer
99	@SCALE ,Scale#(0-2)	Change Scale
100	@SCLIP ,Left(0-255),Right(0-255), Up(0-255),Down(0-255)	Set Clipping
101	@SCRDEF ,Screen#(0-7), DisplayType(0-1),ColorSize(0-4), Xsize(640-2040),Ysize(200-819), BitmapAddress(+),ColorAddress(+)	Define Screen
102	@SCREEN ,DrawScreen#(0-7) [,ViewScreen#(0-7)]	Select Screen
103	@SCROLL ,Direction(0-7), NumberUnits(0-255),Speed(0-255)	Scroll Bitmap
104	@SDAT [,see manual]	Structure Data
106	@SEND	Terminate Structure
107	@SPHERE ,X(0-XMax),Y(0-YMax), Radius(1-255)	Draw Sphere
108	@SPOOL ,X(0-XMax),Y(0-YMax), InnerRadius(1-255), OuterRadius(1-255),View(0-1)	Draw Spool
109	@SSTRUCT ,Structure#(0-191), Device#(8-11),Filename\$	Save Structure
110	@STASH ,Structure#(0-191), Buffer#(0-9),Address(+), X,Y,DX,DY,Compression(0-1)	Save Brush

111	@STORE ,Screen#(0-7), Device#(8-11),Compression(0-1), Filename\$	Save Screen
112	@STRUCT ,Structure#(0-191), Type(1-4),Buffer#(0-9), Address(+)	Define Structure
113	@STYLE ,Shade(0-1),Scale(0-1), Lighting(0-1)	Define Solids
114	@TEXT	Clear Text Screen
115	@TOROID ,X(0-XMax),Y(0-YMax), InsideRadius(1-255), OutsideRadius(1-255),View(0-2)	Draw Torus
116	@VIEW ,Angle	Set View
117	@WALRUS ,RAMtype(0-1)	Set Video RAM
119	@WINDOWCLOSE	Close Window
118	@WINDOWOPEN ,X(0-XMax),Y(0-YMax), Width(1-XMax),Height(1-YMax), Border(0-1)	Create Window
120	@ZOOM ,Structure#(0-191), Size(1-15),X(0-XMax),Y(0-YMax)	Enlarge

#### Standard Structure# Usage:

0-9	Standard Fonts	FONT.
10-19	User Fonts	FONT.
20-29	Logos	LOGO.
30-39	Patterns	PATR.
40-99	Brushes	BRUS.

Buffer# 0-1 are located in the C128  
2-9 are located in the 1750 RAM expander

Angles are in the range of -360 to 360 degrees  
X and Y coordinates are in the range of 0-65535  
Z coordinates are in the range of -32768 to 32767  
Ranges of other values are shown in parentheses (+)  
(+) is a positive number in the range 0 to 65535  
(-) is a number in the range -32768 to 32767  
(0-1) indicates a flag: 0 for false, 1 for true  
(XMax,YMax) = Maximum X,Y for defined screen.  
Optional parameters are indicated by brackets []

## ERG CARD™ FOR USE WITH:

### FAIRLIGHT copyright 1986 Mindscape Inc.

Pause Game	Select Pocket	Up/Right	Use Object	Up/Left	Restart Game	Toggle Sound
1	2	3	4	5	7	8
9	0					
Q	W	E	R	T	Y	U
I	O	P				restore
R/S	A	S	D	F	G	H
J	K	L				
shift	Z	X	C	V	B	N
M						
Drop Object	Down/Left	Pick Up Object	Down/Right	Fight	Jump	



**ERG-CARD<sup>SM</sup> REFERENCE CARDS**

(DO-IT-YOURSELF SIDE)

**ERG-CARD<sup>SM</sup> REFERENCE CARDS**

(DO-IT-YOURSELF SIDE)

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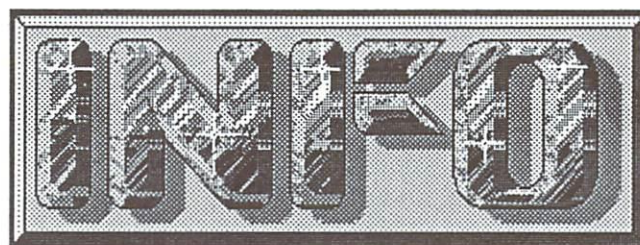
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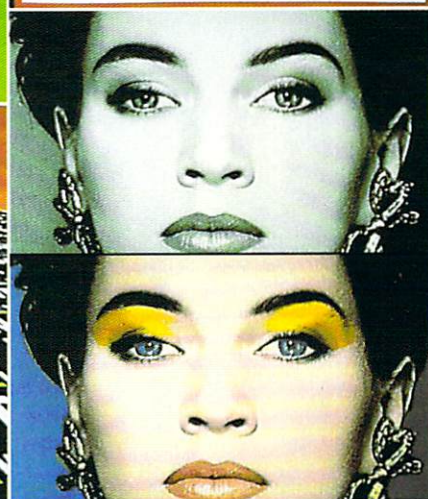
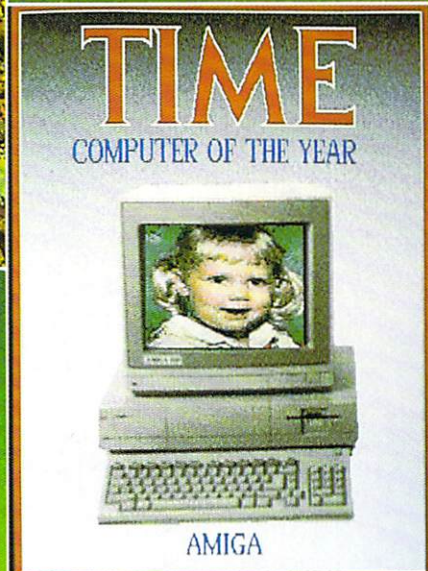
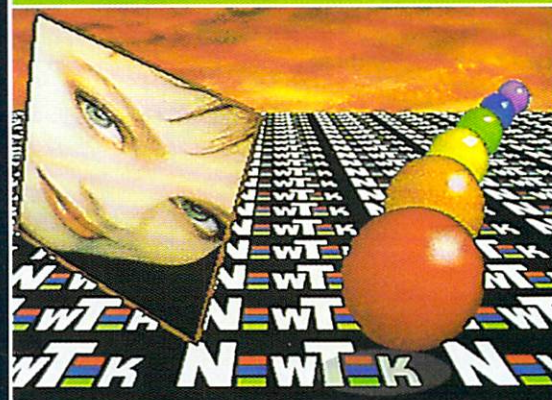
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